

Brooklyn Inland Wetlands Commission
Regular Meeting Agenda
Tuesday, October 10, 2023
Zoom and In-Person Meeting
Clifford B. Green Memorial Center
69 South Main Street
6:00 p.m.

In-Person: Community Center 31 Tiffany Street Upper Level, Brooklyn, CT	
Online: Click link below: https://us06web.zoom.us/j/83921116459	OR Go to Zoom.us , click Sign In On the top right, click Join a Meeting Enter meeting ID: 839 2111 6459
Phone: Dial 1 646 558 8656 US Toll Enter meeting number: 839 2111 6459 You can bypass attendee number by pressing #	

Call to Order:

Roll Call:

Staff Present:

Seating of Alternates:

Public Commentary:

Additions to Agenda: None.

Approval of Minutes: Special Meeting Minutes September 12, 2023

Public Hearings:

1. IWWC 23-010 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Driveway with wetlands crossing; 2,100 sq ft of wetlands alterations for single-family house, septic system, well and grading in the upland review area.

Old Business:

- 1. IWWC 23-010 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone;** Driveway with wetlands crossing; 2,100 sq ft of wetlands alterations for single-family house, septic system, well and grading in the upland review area.
- 2. IWWC 23-002 IWWC 23-002 104 Church Street – Map 35, Lot 4-3 – Stephanie Turner, owner.** New single-family dwelling, septic system, driveway, well and associated grading in the upland review area. Compliance issues.

New Business:

1. DR 23-003 Elizabeth Seabury, et al., owners C. Casadei, applicant. Old Tatnic Hill Road, Map 14, Lot 9, RA Zone; Timber Harvest to remove unacceptable growing stock and establish natural regeneration; amount of forest products to be harvested: 150 mbf; 100 cords.

2. IWWC 23-011 Nicole Wineland-Thomson Fisher, applicant; 459 Wolf Den Road, Map 18, Lots 18A & 18B, RA Zone; Proposal to construct a gravel road and parking lot for 40 cars for wedding and event venue; majority of parking lot is within the upland review area, one small pocket of wetlands will be permanently filled.

Other Business:

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary:

Adjourn:

Richard Oliverson, Chairman

Brooklyn Inland Wetlands and Watercourses Commission

Special Meeting Minutes

Tuesday, September 12, 2023

Zoom and In-Person Meeting

Community Center

31 Tiffany Street Upper Level

Call to Order: 6:02 pm

Roll Call: Richard Oliverson; Adam Brindamour; Adam Tucker; Jason Burgess.

James Paquin (arrived @ 6:22pm); Janet Booth (arrived @ 6:44pm).

Absent: Demian Sorrentino.

Staff Present: First Selectman, Austin Tanner; WEO, Margaret Washburn; Recording Secretary, Terry Mahanna.

Attendance: Attending in person: Norm Thibeault, Killingly Engineering; Paul Archer, Archer Surveying; Attorney Ernest Cotnoir; Andrew Kausch, Brooklyn resident; Jake Kausch, Brooklyn resident; Jackie Igliozi, Brooklyn resident; one additional attendee in audience.

Attending via Zoom: Ryan Kelleher; Sharon Loughlin; Sharon Hawes; two anonymous participants.

Seating of Alternates: None.

Public Commentary: None.

Approval of Minutes:

Site Walk Minutes August 16, 2023 – APPROVED 4-0-0.

Special Meeting Minutes August 8, 2023 - APPROVED 4-0-0.

Public Hearings:

1. IWWC 23-006: Ryan Kelleher. 404 Wolf Den Road, Map 18, Lot 22, RA Zone; Improvement of an existing gravel driveway through a wetland to construct a single-family home on 41 acres of land.

Norm Thibeault, as representative of this project, presented a copy of the certified mailing receipts as well as a copy of the posted notice for the abutters. He provided an overview of the property for those who did not attend the site walk: the proposed project has approximately 4,070 sf of wetlands impacts with a good portion of the existing driveway qualifying as wetlands. The previously-proposed use had been a 12-lot subdivision with a 24'- wide driveway, whereas this project is for a single-family home with 1/3rd the fill of that previously-proposed. Over the years, some of the gravelly soil on the driveway has developed wetlands characteristics, and the existing 15" cross-culverts have most likely become clogged with sediment. To alleviate this issue, Mr. Thibeault proposed replacing the existing culverts with open-bottomed 2' x 4' box culverts, which will have more capacity and allow for a natural stream bottom environment for wildlife (fish, amphibians). To compensate for additional volume, a compensatory flood storage area is included in this proposal. This proposal was reviewed by Syl Pauley, Regional Engineer, and determined to withstand a potential 100-year storm.

Adam Brindamour asked if just a portion of the driveway has developed wetlands characteristics over the years. Mr. Thibeault responded - yes.

Brooklyn resident Jackie Igliozi (residing at 8 Woodward Rd) inquired as follows:

- Is the driveway still gravel? Mr. Thibeault responded – yes.
- Can I see the 1934 photos of driveway? Mr. Thibeault provided.
- Has the floodplain changed? Mr. Thibeault indicated that FEMA has only changed the areas where a flood study was done. The map he displayed has not changed.
- Will staked hay bales only be in place during construction? Mr. Thibeault responded – yes.
- Will there be ongoing maintenance of driveway? Per Mr. Thibeault, maintenance is ongoing and would likely include an occasional top dressing.
- Impact of future development? Mr. Thibeault responded that any future development would need to be re-permitted/approved. This project is for a single-family home.
- Study/impact on wildlife? Mr. Thibeault indicated that no study has been done, although the Army Corps of Engineers prefers a natural stream bottom. He doubts any fish are there, the concern is mainly frogs and salamanders. Since the pipes are currently clogged, box culverts will improve the natural flow.
- Confirmation of a paved driveway on the slope: Mr. Thibeault confirmed and added that drainage from the paved portion will be collected in a swale and the runoff will be recharged into the ground in a basin at the toe of the slope.
- What will happen to snow? Mr. Thibeault indicated it will go out to the perimeter of the driveway and melt into the wetlands. A paved apron at the point in which the road transitions to gravel is required by the Town.

Brooklyn resident Andrew Kausch asked how many open crossings and does it add to the height? Mr. Thibeault responded – two and yes, pipes are adding about 6-8” to the driveway.

Mr. Thibeault added: a portion of wetlands south of the driveway had at one time been mined, possibly for peat moss.

Mr. Kausch indicated he is in favor of this project and wishes them luck.

James Paquin (arrived @ 6:22pm) inquired as to the site walk. Margaret Washburn confirmed she and Janet Booth met Mr. Thibeault at the site, and that Janet Booth also attended the IWWC site walk.

A **motion** was made at 6:25pm by Adam Brindamour to close the Public Hearing. Jason Burgess seconded. The motion carried unanimously by vote (5-0-0).

Old Business:

1. IWWC 23-006 Ryan Kelleher. 404 Wolf Den Road, Map 18, Lot 22, RA Zone; Improvement of an existing gravel driveway through a wetland to construct a single-family home on 41 acres of land.

Adam Brindamour indicated that those who went on the site walk saw an improvement, although it is a tight spot to work in. Jason Burgess agreed and recommended requiring a driveway as-built plan.

A **motion** was made by Mr. Brindamour and seconded by Adam Tucker to approve this application with standard and special conditions as follows:

- The applicant shall notify the wetlands agent at 860-779-3411 ext. 31 to schedule a pre-construction conference a minimum of 5 business days prior to the start of construction.
- Sediment controls are to be installed and the wetlands agent is to be notified at 860-779-3411 ext. 31 for an inspection before any other work can begin.
- Driveway construction work shall be done under low seasonal groundwater conditions.
- The contractor shall consult a weather forecast prior to starting driveway construction work. If any storms are predicted in the following 24-hour period, driveway construction shall be delayed.
- An as-built plan of the driveway is to be provided to the wetland's agent upon completion.

The **motion** carried unanimously by vote (5-0-0).

2. IWWC 23-007 Tripp Hollow Investments LLC, Tripp Hollow Road, Map 14, Lot 10-1 RA Zone; Proposed single-family house, well, septic system and site grading in the upland review area on a subdivision lot created in 2004.

Norm Thibeault, as representative of the project, indicated the site has been re-flagged by Joe Theroux (flags 1-40 are new, A-series represent previous flags) although there were not many changes. This project has a slightly smaller footprint than the previously proposed, with the footing drain being 15'-20' further from the wetlands resulting in minimized clearing in the back.

Margaret Washburn stated that NDDH has reviewed and approved the revised plan. Mr. Thibeault confirmed this. Mr. Thibeault added that soils for the septic were good, and that there is a lower-than-average water table.

A **motion** to approve was made by James Paquin and seconded by Jason Burgess. The motion carried unanimously by vote (5-0-0).

3. 253 Wolf Den Road, Map 17, Lot 32-3 – Janessa Choquette. Remediation work update.

Chairman Oliverson stated that this item should have been listed under Other Business.

Margaret Washburn indicated she did an inspection on 9/11/23, took photos and closed the order to correct wetlands violations.

4. 071321A A. Kausch & Sons, Pomfret Landing Road/Church Street, Map 37, Lot 17 and Map 37 Lot 20 and 21; Wetlands crossing for driveway, 2 residential homes, septic system, well, minor grading. **Show cause hearing for wetlands violation.**

Attorney Ernest Cotnoir introduced himself as representative for A. Kausch & Sons, and asked Ms. Washburn to present the Order.

Margaret Washburn handed out a packet including: the order to Mr. Kausch, notes from her 7/31 inspection, email correspondence between herself and Attorney Cotnoir, photographs provided by Jake Kausch from 8/31/23 showing millings cleared from the pipe and a tree that was cut down by Eversource.

Ms. Washburn also provided the following introduction:

Janet Booth, Adam Brindamour and Ms. Washburn had scheduled an inspection on 7/31/23 with Paul Archer on the abutting lot to the south. While they were there, they observed that millings had been used to resurface the gravel driveway. The driveway was shown as gravel on the approved plans. Some millings were deposited in the wetlands at both ends of the westernmost wetlands crossing culvert. While they were there Jake Kausch joined them. Jake Kausch agreed to remove the millings from the wetlands at both ends of the westernmost wetlands crossing culvert. At the 8/8/23 IWWC Special Meeting, the commission directed Ms. Washburn to issue an order and hold a Show Cause Hearing, which she did.

Jake Kausch indicated he took out about 5 shovels of millings that were in the wetlands and threw them on the driveway. He intends to continue to maintain it.

James Paquin asked Jake Kausch to confirm that he owns the driveway (which is shared), lives in the house, has a CO and the deed is in his name. Jake Kausch responded yes to all.

Ms. Washburn indicated that after the July meeting she asked the Town Clerk who owns 411 Church Street, and the response was that it was transferred in a deed from A. Kausch & Sons to A. Kausch & Sons. Jake Kausch added that it is now in the name of Andrew J. Kausch which was done over a year ago. Ms. Washburn indicated that she asked the Town Clerk on 8/14/23 and that the properties had not been transferred except to do the split in February of 2023. J. Kausch will check into this as there might be confusion since he holds the same name as his father.

Mr. Paquin indicated that he did not consider millings to be filling in the upland review area. He said that even if a small number of millings went into the wetlands, he considered the work to be routine maintenance. He said that millings will not erode into the wetlands as much as gravel would. He suggested the commission lift the cease-and-desist order and apologize to Mr. Kausch. Ms. Washburn clarified that no cease-and-desist order was issued. At the last IWWC meeting, when Mr. Paquin was absent, the commission felt more fill had come in and that historically, as with Bunny Drive, a permit would have been required. Mr. Paquin stated he feels this is altogether different from Bunny Drive and that Mr. Kausch's actions should be considered maintaining and improving his driveway.

Attorney Cotnoir indicated the order was confusing because the order referenced subsequent as-built plans when there had already been a permit that had been complied with for months. Mr. Kausch thought he was doing maintenance.

Richard Oliverson confirmed that the commission had directed Ms. Washburn to send the notice. He stated he understood the owner's position and that the bigger issue was that millings had spilled over the side and into the wetlands, which is what the commission wanted addressed. Also at issue was that Jake Kausch verbally told Ms. Washburn he would take care of it, and it had not happened. Mr. Oliverson apologized for the confusion and thanked Mr. Kausch for tending to it.

Jake Kausch added that he read the meeting minutes from the previous IWWC meeting and saw that he would be receiving the letter. He checked his mail daily, but never received the letter. Mr. Oliverson and Ms. Washburn indicated that the letter would have been sent to the owner, and therefore most likely went to his father or his business, as the owner of record.

Ms. Washburn added that the plan which had been approved was for a gravel driveway, and that Mr. Kausch deviated from the plan when adding the millings. She indicated the driveway is much higher now. Attorney Cotnoir reiterated the confusion with the order referencing the need for as-builts versus not saying work was done without a permit. Mr. Oliverson apologized for the confusion and stated that the commission has gotten to the point that they needed.

Andrew Kausch added that the work done was an improvement to the driveway and it now looks beautiful.

Mr. Paquin added that he did not understand how we got to this point. Mr. Kausch said that he has put more work into this property than other nearby owners and their properties and feels there is a double standard. Mr. Paquin questioned the commission's decision to send a letter and stated he is embarrassed.

Ms. Washburn stated the commission's action tonight should be one of the following: to uphold the order, modify the order or nullify the order.

Mr. Jake Kausch reiterated the amount of millings that existed. Mr. Oliverson stated he understood it might not have been as much as they thought. Mr. Kausch stated he understood the commission's perspective and will pay a fine or do whatever is needed. Ms. Washburn and Mr. Oliverson stated there is no fine.

Janet Booth added that she is new to the commission and new to the project. She had attended the site walk. She said that the driveway is beautiful. Her understanding had been that millings were used in lieu of gravel. She stated she was not sure how this should have been handled but it might have been inadvertent.

Mr. Andrew Kausch reiterated the benefits of the work they had done and that it is standard maintenance to top-dress a driveway. He stated these fixes should not require a permit. Ms. Washburn stated that is one way to look at it, but the plans called for a gravel driveway and its not a gravel driveway.

Attorney Cotnoir stated he believed the commission now knew the situation and on behalf of the respondent felt the back and forth amongst the commission and respondent was not appropriate. He stated the order called for the removal of millings and that has been done.

A **motion** was made by Mr. Paquin and seconded by Adam Tucker to lift the order and apologize. Janet Booth opposed the motion as it relates to the need to apologize. The motion carried by a majority vote (5-1-0).

New Business:

1. IWWC 23-010 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Driveway with wetlands crossing; 2,100 sq ft of wetlands alterations for single-family house, septic system, well and grading in the upland review area.

Paul Archer represented the project. He stated, in reference to the previously denied application, that he had forgotten to post the sign required for the public hearing and to notify abutters of the public hearing. He does not understand the need for a new application for the same project.

Adam Brindamour reminded Mr. Archer that the previous application was received at the July IWWC meeting. Mr. Archer had agreed at that meeting to meet some of the commission members on July 31st to walk the

property. Mr. Archer did not show up. The day the public hearing was to be held the commission discovered the sign required for the public hearing was not posted, and that the abutters had not been notified of the public hearing. Mr. Brindamour stated the commission had tried to expedite the project, but it did not work because of the applicant's failure to take these steps.

Mr. Archer disagreed as there was no scheduled site walk due to a lack of quorum. He understood that the public hearing would not be held, but he stated it has not been past practice by the board to deny an application and restart the timeline. He felt the commission cost the applicant more money. Mr. Brindamour disagreed and responded that Mr. Archer cost the applicant more money.

Richard Oliverson asked if all Syl Pauley's comments were addressed. Mr. Archer stated he believed so.

Margaret Washburn indicated she has not yet reviewed the new plans but would like to be able to differentiate (by crosshatching) where the proposed fill would be placed in the wetlands. She also noted some of the past problems that has caused delays, such as wetlands flags not being in place – these should ideally be hung when the application is submitted so that she or the commission members can do a site walk at any time.

Jake Kausch asked if every project requires flags to be hung. Mr. Oliverson responded – yes, flags are very important.

Andrew Kausch added that he appreciates the efforts by the commission members and knows they are all volunteer. He indicated that about 80% of the flags are still there.

Ms. Washburn agreed to send Mr. Archer her comments.

Jason Burgess stated that a site walk should be scheduled. The site walk was scheduled for Friday, September 22nd at 5:00 p.m. Paul Archer stated that if any commission members cannot attend the site walk, they can call him, and he will meet them at the site on another day.

Ms. Washburn stated that Mr. Archer still had not replaced the missing wetlands flags. She asked Mr. Archer to replace them by September 22nd, and to flag the centerline on the driveway.

A **motion** was made by Adam Brindamour to schedule a public hearing for Tuesday, October 10th, seconded by James Paquin. The motion carried by unanimous vote (6-0-0).

Other Business: None

Communications:

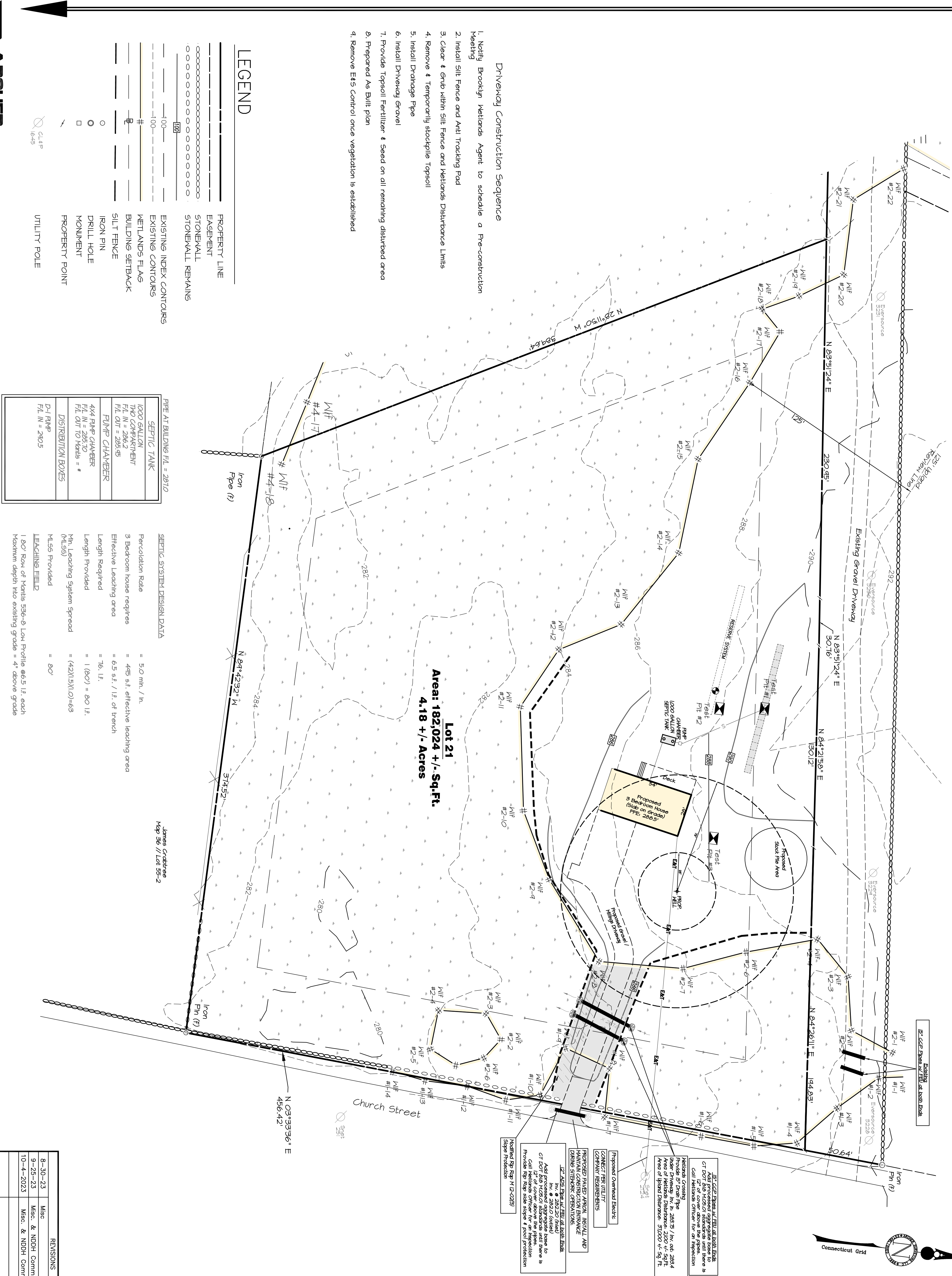
1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary: None

Adjourn: Motion to adjourn was made at 7:19 p.m. by James Paquin and seconded by Jason Burgess. Motion carried unanimously by vote (6-0-0).

IWWC 9-13-23

Submitted By:
Terry Mahanna
Recording Secretary



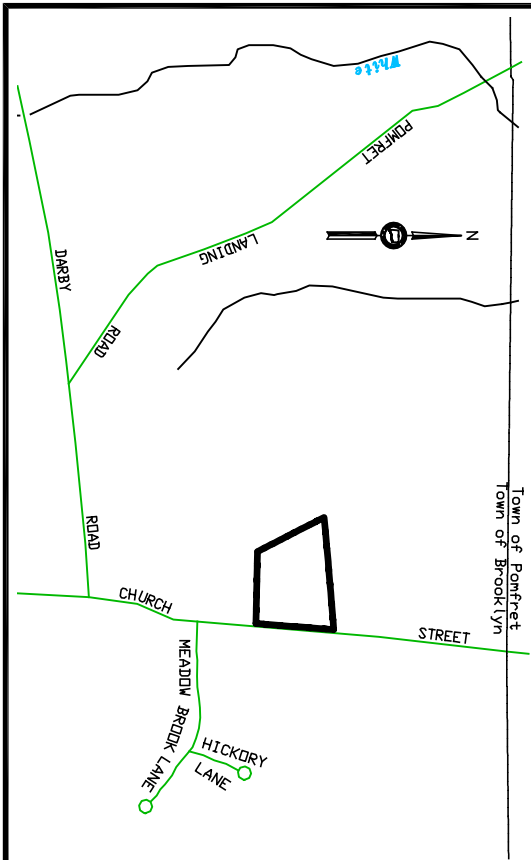
Notes

1. This survey has been prepared pursuant to the Regulations for Connecticut State Agencies Section 20-300b-20 and the "Standards for Surveys and Maps in State of Connecticut," as adopted by the Connecticut Associations of Land Surveyors, Inc. on September 26, 1996
- This Survey conforms to a Class "A-2" Horizontal Accuracy Class "1-2" Vertical Accuracy
- Survey Tips: Site Development Plan
- Boundary Determination: Resurvey
- Intent: Wetlands Crossing and work within the upland review area
2. Parcel shown as lot 21 on Assessors Tax Map 37 of the Brookline Assessors Office

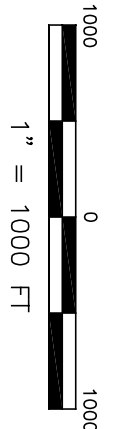
3. Wetlands were flagged in the field by Robert Russo and field located by Anclams Surveying LLC. Total Area of Wetlands Flagged and located: 12,794 +/- Sq.Ft. 2.47 +/- Acres.
4. Property is located in the RA Zone. Frontage: 150' Front/Rear Setback: 50' Side Setback: 40'

5. There is no proposed regulated activities within 500' of the boundary of an adjoining municipality.

6. The applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception or through inaccuracy or misleading information.
7. Vertical Datum Depicted Hereon is Approximate North American Vertical Datum 1988 (NAVD88). Based on Global Positioning System (GPS) Observations.
8. North Orientation Depicted Hereon is Approximate North American Datum 1983 (NAD83). Based on Global Positioning System Observations.
9. Topographic Features depicted were taken from NOAA LiDAR Data and conforms to Topographic Accuracy Class "1-D", Contour Interval = 2'. Vertical Datum = Approx. NAVD 88.



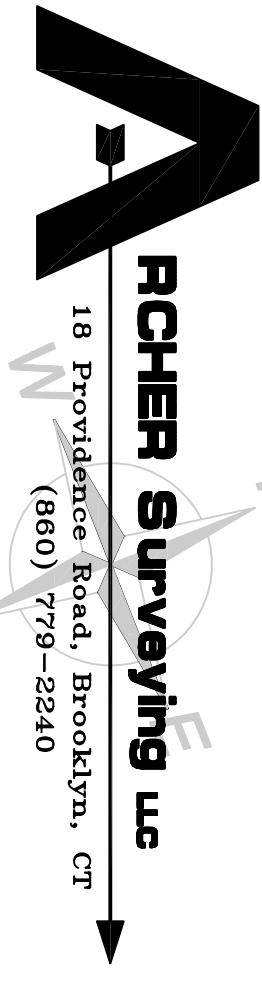
Location Map



REVISIONS	
8-30-23	Misc
9-25-23	Misc. & NDDH Comments
10-4-2023	Misc. & NDDH Comments

Site Development Plan

Prepared For:
A. Kausch & Sons LLC
Church Street & Pomfret Landing
Brooklyn, Connecticut



Sheet No.	Project No.	Date:
1 OF 3	AS 2162	Aug. 30, 2023

To my knowledge and belief, this map is substantially correct as noted herein.

HW 10/4/2023
Paul M. Archer, Conn. L.S. #70013

No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

KMP associates

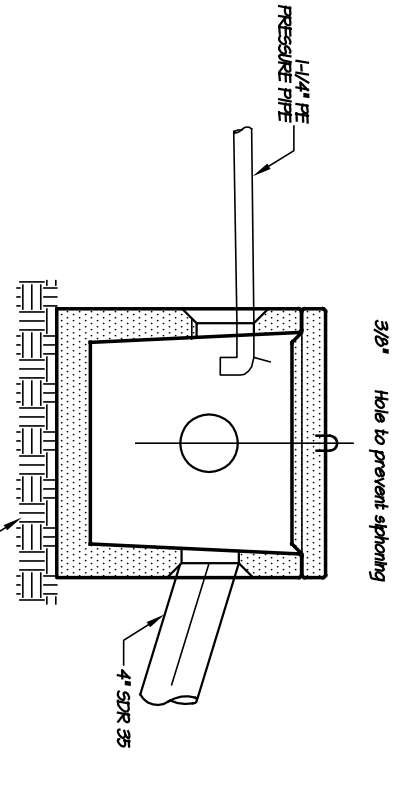
10/4/2023

DAVID A. SMITH, P.E. #14173

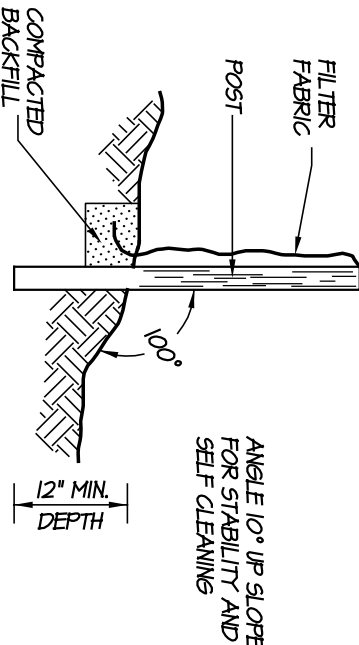
NOT VALID UNLESS SEAL IS AFFIXED HERETO

Paul M. Archer, Conn. L.S. #70013

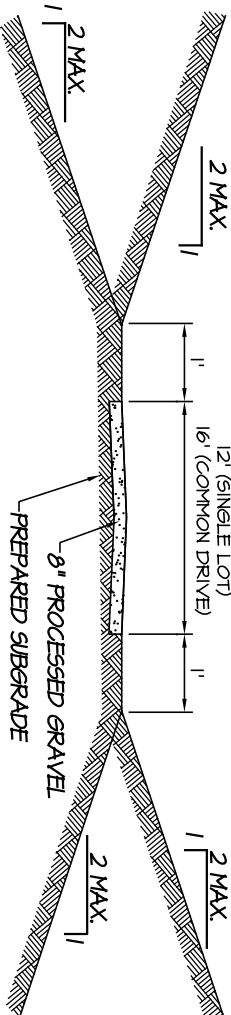
S. #70013



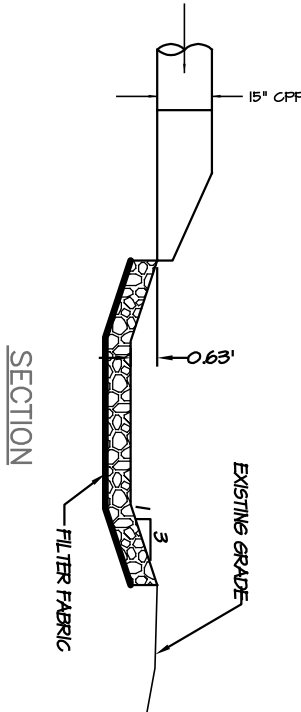
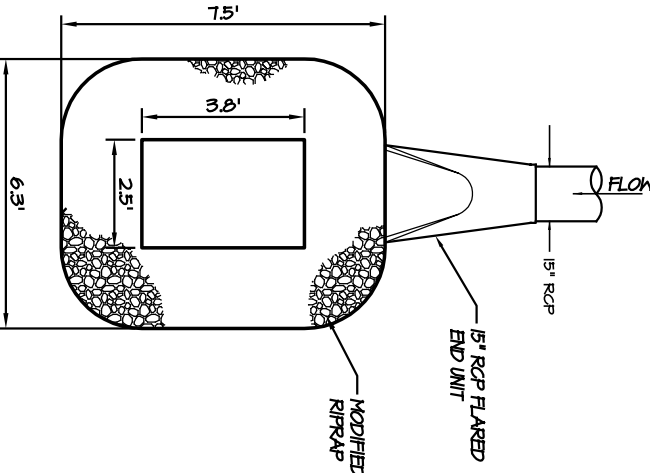
PRESSURE PIPE D-BOX
DETAIL
NOT TO SCALE



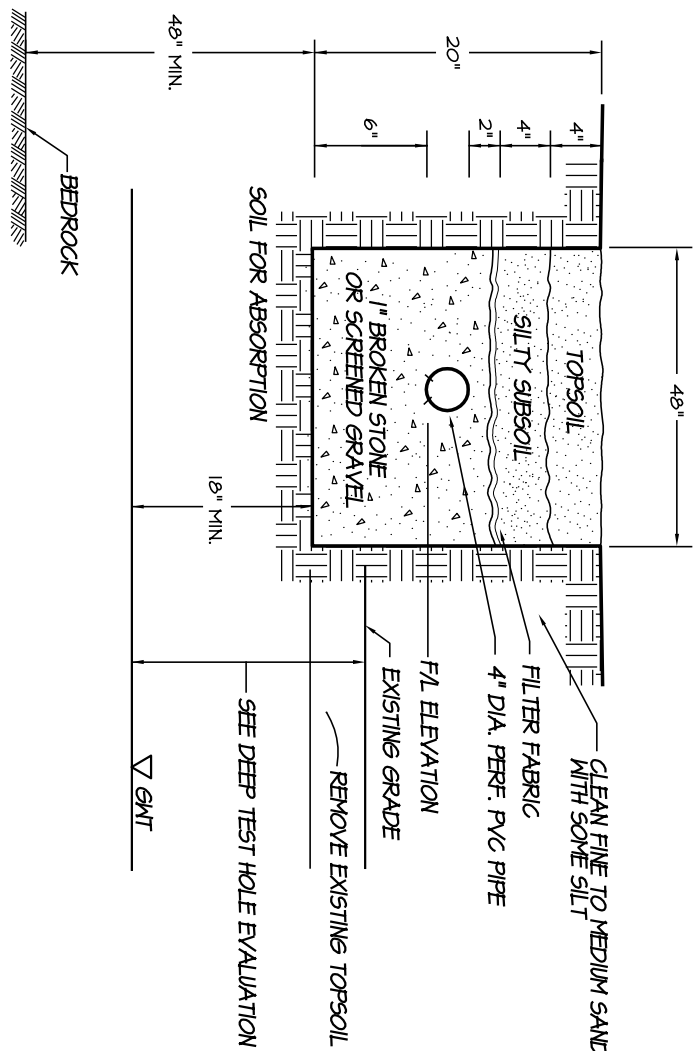
SILT FENCE
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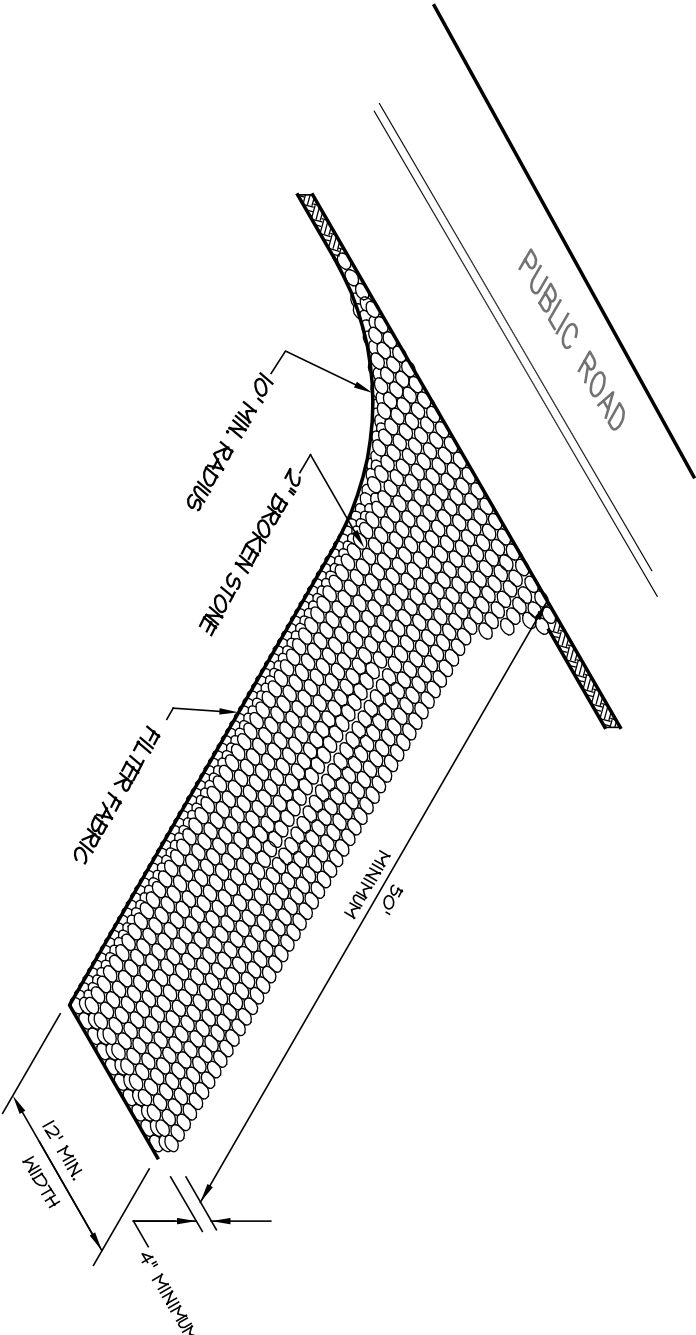
GRAVEL DRIVE DETAIL
NOT TO SCALE



PREFORMED RIPRAP SCOUR HOLE
NOT TO SCALE



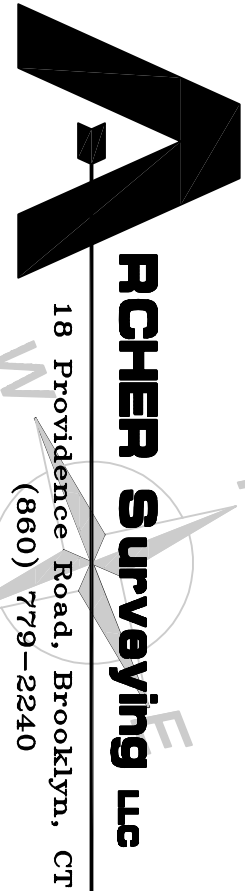
TYPICAL LEACHING
TRENCH SECTION
NOT TO SCALE



CONSTRUCTION ENTRANCE
NOT TO SCALE

Detail Sheet

Prepared For:
A. Kausch & Sons LLC
Church Street
Brooklyn, Connecticut



REVISIONS	
10/4/2023	Misc. Edits

Sheet No.	3 OF 3	Project No.	AS 2162	Date	Aug. 30, 2023
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NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

ENGINEER'S REPORT SITE DEVELOPMENT PLAN REVIEW CHURCH STREET & POMFRET LANDING (MAP 37, LOT No. 21) BROOKLYN, CT (September 25, 2023)

The comments contained herein pertain to my review of a plan, entitled "Site Development Plan, Prepared for A. Kausch & Sons, LLC, Church Street & Pomfret Landing, Brooklyn, Connecticut," prepared by Archer Surveying, LLC / KWP Associates, dated August 30, 2023. More specifically, this plan describes the location of a proposed single-family 3-bedroom home (slab on grade) with septic system, drinking water well, proposed grading and a driveway with two cross culverts constructed through a wetland.

The following comments address wetlands issues as well as concerns regarding the practicality of the plan being able to be used for construction of the proposed development.

Site Development Plan – Sheet 1 of 2

1. The professional engineer's and land surveyor's seals are missing from the plan.
2. Proposed grading around the proposed house needs to be added to the plan. This needs to demonstrate that overland stormwater runoff can be diverted around the dwelling and attached garage.
3. The finish elevation of the building slab is not indicated on the plan.
4. A "deck" with stairs is shown to the rear of the house; however, it is unclear how this will be constructed.
5. Rip rap splash pads need to be shown on the plan at the inlet and outlet of each pipe.
6. Actual field derived spot elevations are needed in close proximity to both ends of the proposed pipe installation and where rip rap will be installed since it is noted on the plan that contour elevations on the plan are "approximate." Spot elevations will serve as an aid in evaluating the invert elevations stipulated on the plan versus actual field conditions.
7. Drainage calculations are needed to verify the size of the proposed pipes in the driveway. This requirement is to evaluate the safe handling capacity of the culverts of runoff from the entire watershed contributing to flow through the pipes.
8. Direction of flow arrows need to be included for each pipe as an aid to understanding where the inverts listed in the "wetlands crossing note" apply.

9. Erosion and sediment controls need to be extended as follows: on the south side of the proposed house to a point opposite Wetland Flag 2-15 and on the north side of the house to the north property line.
10. The area of wetland disturbance (2,100± sq. ft.) for driveway construction needs to be identified on the plan using a cross-hatched symbol.
11. Test Pit #1 identification has been masked by the proposed septic system leach field and needs to be relocated on the drawing to clearly identify the test pit number.
12. According to Test Pit #2 & #3 data represented on Sheet 2 of 2, it appears that the slab of the proposed house will be very close to the average seasonal high water table indicated by mottles at 20" and 26", respectively. I have seen conditions like this in the past causing a concrete slab in a house to crack (fail) and become displaced. *I strongly recommend the professional engineer review this more closely and develop a method of protecting the slab from potential failure due to the close proximity of high seasonal groundwater levels.* This may require filling a portion of the site where the house with garage will be located.
13. According to data presented for Test Pit #2 on Sheet 2 of 2, the "reserve septic leach field" is not in a location as good as that of the primary leach field system. Has this been carefully evaluated by the Northeast Connecticut District Department of Health?
14. It is important to note that the Test Pit and Percolation Test locations drawn on the plan do not correlate at all to the NDDH Sanitarians field sketch. Why the discrepancy and how may this affect the location of the septic system primary and reserve leach fields?
15. According to the existing and proposed contour elevations on the plan it appears that the septic system may need to include a pump in order to operate. Is a pump required and if so, the pump chamber needs to be included on the plan? Lack of septic system elevations on the plan makes it difficult to ascertain this.
16. The "Building Setback Line" symbol in the "Legend" does not appear on the Site Plan.
17. Symbols in the "Legend" not used in the Site Plan need to be deleted from the plan to avoid confusion.
18. The "Driveway Construction Sequence" does not include any mention of using bituminous concrete millings. Millings need to have a stabilization additive incorporated in them to minimize movement of material in wheel tracks, causing rutting and some material being pushed into surrounding wetland. Millings need to be compacted with a motorized roller, not a walk-behind vibratory plate compactor. Additionally, considering the high seasonal groundwater elevations as evidenced in the Soil Test Pit Data (mottling), driveway construction needs to be limited to the "dry season," i.e., July – August, to avoid pumping groundwater up to the working ground surface.

Site Development Plan (Details and Notes) – Sheet 2 of 2

1. The professional engineer's seal and signature is required on this plan.
2. A driveway typical section detail needs to be added to this plan.
3. A detail of the rip rap splash pads need to be added to this plan.

4. Lawn seed varieties with percentage of each need to be stipulated on the plan and not rely on a contractor looking through the Connecticut 2002 Guideline for Erosion and Sediment Control, assuming they don't have a copy of that.
5. Pipe invert elevations need to be added to the upper "Wetland Crossing" cross-section and the slope of the pipe corrected to indicate the difference between the inlet (elevation 283.75) and outlet (elevation 283.40) as well as the length of the pipe to be installed. Also, elevations need to be added to the ends of horizontal delineation lines, distances indicated at the bottom of the vertical column delineation lines, and the title of the detail needs to include the words "Cross Section." Furthermore, there is a note here stating "*remove exiting topsoil/organics and provide bedding & backfill material per detail.*" Where is the detail and what is the specification of the backfill material?
6. Elevations need to be added to horizontal lines in the lower "Wetland Crossing" profile detail and spot elevations added over each 15" pipe. Distances in feet need to be indicated at the bottom of vertical lines. Also, the title of the detail needs to include the word "Profile." Furthermore, the note "proposed grade" is meaningless as there are no elevations, spot or otherwise, defining the "proposed grade." This needs clarification.
7. Note 3 under "Septic System Construction Notes" needs correcting to agree with the Septic Tank detail on this sheet and the septic tank note on Sheet 1 of 2.
8. Strength classifications of the precast concrete components of the septic system need to be noted on the plan, e.g., H20.
9. The "continuous hot asphalt seal" in the Cross Section of the "1,000 Gallon 2 Compartment Septic Tank" detail does not belong in this detail and needs to be removed. Furthermore, this detail appears to be for a 1,250 gallon tank, not a 1,000 gallon tank. The detail needs to be adjusted, accordingly.
10. The "Typical Leaching Trench Section" does not appear to be drawn according to the NDDH sanitarians comments in his Subsurface Site Investigation report of June 22, 2023 wherein it is stated that "*The bottom of the system must stay 4" above grade*" and that the "*MLSS must be addressed on the engineered plan.*" The detail needs to be revised to reflect this.
11. The "Standard D-Box" detail is incomplete as it is missing an elevation view along the longitudinal axis and a plan view.
12. If a pump chamber is needed for this system, a detail of this needs to be added to this sheet.
13. If this plan is to serve as an "engineered plan" for the construction of the septic system, much information to do that is missing, i.e., elevations, distances, etc.

Plan modifications based upon the comments above need to be resubmitted for further review.

Syl Pauley, Jr., P.E.

By: _____
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

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7:30-8:30pm @ East Woodstock
Congregational Church, Wood-
stock Rd., East Woodstock. For
info., call or text 860-634-3271
***ST02-15*TF

TOWN OF BROOKLYN

INLAND WETLANDS AND WATERCOURSES COMMISSION PUBLIC HEARING NOTICE

The Brooklyn Inland Wetlands and Watercourses Commission will hold a public hearing, both in-person and via Zoom, on Tuesday, October 10, 2023, at 6:00 p.m. at their regularly scheduled meeting at the Clifford B. Green Community Meeting Room, Suite 24, 69 South Main Street on the following:

IWWC 23-010 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Driveway with wetlands crossing; 2,100 sq ft of wetlands alterations for single-family house, septic system, well and grading in the upland review area.

A copy of the application is available for review. All interested parties may attend the meeting, be heard and written correspondence received.

Richard Oliverson, Chairman

T

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TOWN OF BROOKLYN INLAND WETLANDS AND WATERCOURSES COMMISSION PUBLIC HEARING NOTICE

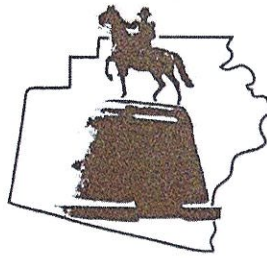
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A copy of the application is available for review. All interested parties may attend the meeting, be heard and written correspondence received.

Richard Oliverson, Chairman

T



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

104 Church St

10/3/23

Address

Date

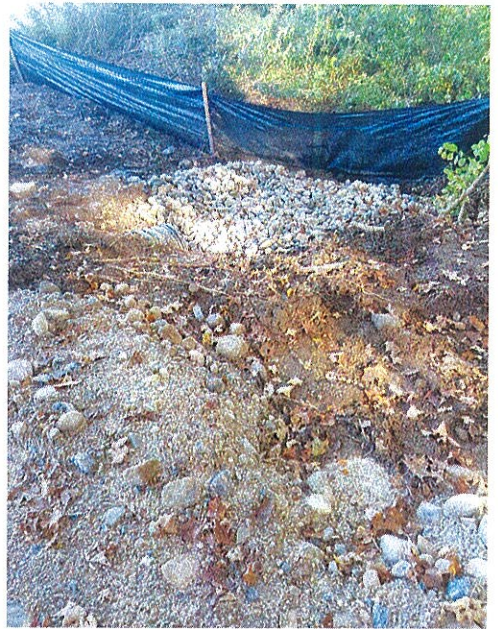
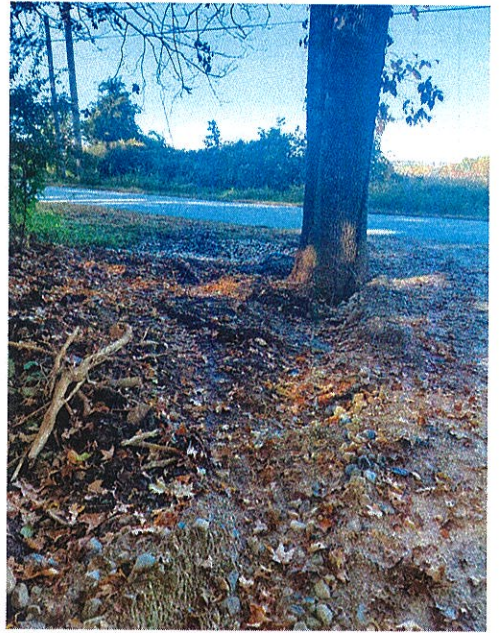
I met Stephanie Turner, inspected and took photos, in response to a complaint from a commission member. The commission member expressed concern that the construction entrance has not been installed. Stephanie says the driveway is not the construction ^{entrance}. They've been using the driveway at 92 Church St. Stephanie says no traffic is coming out of the driveway. Site work guy is Bob. Bob will compact the driveway next week. After that the apron will be installed. Stephanie will finish grade loan + seed the topsoil where the culvert was installed. The sediment controls are well installed.

Commission Representative

M Washburn

Owner or Authorized Signature

Stephanie Turner



DEEP TEST PIT DATA / SOIL DESCRIPTIONS	
PERFORMED BY: Donovan Moe	
WITNESSED BY: Northeast District Department of Health	
DATE: 06/22/2022	
TEST PIT: 1	TEST PIT: 2
0"-6" Topsoil	0"-6" Topsoil
6"-18" Brown Fine Sandy Loam	6"-19" Brown Fine Sandy Loam
18"-80" Moderately Compact Gray Fine Sandy Loam	19"-80" Moderately Compact Gray Fine Sandy Loam
MOTTLES: -	MOTTLES: -
GROUNDWATER: NO	GROUNDWATER: NO
LEDGE: NO	LEDGE: NO
ROOTS: 6"	ROOTS: 6"
RESTRICTIVE: 18"	RESTRICTIVE: 19"

TEST PIT: 3	TEST PIT: 4
0"-6" Topsoil	0"-9" Topsoil
6"-28" Orange Brown to Tan to Tan Fine Sandy Loam	26"-38" Tan Fine Washed Sand
28"-83" Moderately Compact Gray Fine Sandy Loam	19"-80" Moderately Compact Gray Fine Sandy Loam
MOTTLES: -	MOTTLES: -
GROUNDWATER: NO	GROUNDWATER: NO
LEDGE: NO	LEDGE: NO
ROOTS: 8"	ROOTS: 15"
RESTRICTIVE: 28"	RESTRICTIVE: 38"

PERCOLATION DATA PERC A - DEPTH 30"	
TIME	DROP (INCHES)
10:23	8"
10:24	10.5"
10:35	13"
10:41	Empty
PERCOLATION RATE > 2.4 MIN./IN.	
NOTES: PERCOLATION TEST PERFORMED ON 6/23/2023	
PERFORMED BY Donovan Moe	

SURVEYOR SHALL SET A BENCH MARK IN THE AREA OF THE SEPTIC SYSTEM AT THE TIME OF CONSTRUCTION STAKE-OUT.

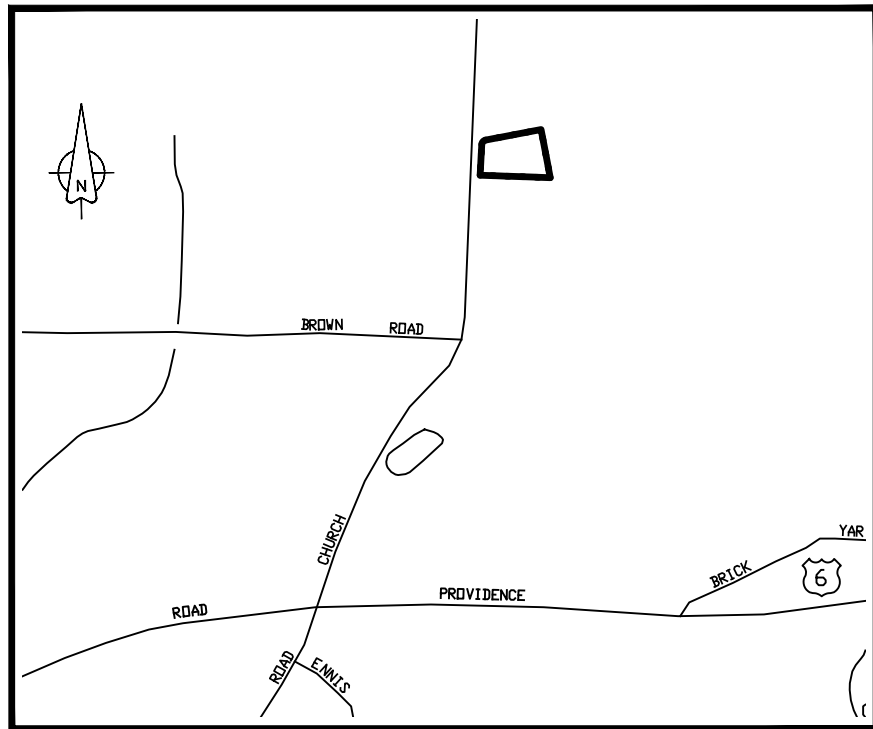
SEPTIC SYSTEM DESIGN DATA

Percolation Rate = 2.4 min. / in.
2 bedroom house requires = 375 s.f. effective leaching area
Effective Leaching area = 11 s.f. / l.f. of trench
Length Required = 375/11 = 35 l.f.
Length Provided = 7 units @ 5 l.f. each = 35 l.f.
Min. Leaching System Spread (MLSS) = 30.0 x 1.0 x 1.0 = 51'
MLSS Provided = 35'

LEACHING FIELD

7 Mantle 536-8 leaching units @ 5 l.f. each
Maximum depth into existing grade = 0"

SEPTIC TANK	
1000 GALLON TWO COMPARTMENT F/L IN = 230.17 F/L OUT = 229.42	
DISTRIBUTION BOXES	
D-1 (STANDARD) F/L IN = 229.17 F/L OUT TO TRENCH = 229.00	



Location Map

SCALE
1" = 1000 FT

Lot 4-3
Area: 71,002 +/- Sq.Ft.
1.63 +/- Acres

NF
David & Nancy Bell
Map 35 // Lot 4-17

No Well or Septic
within 75' of Proposed
Activities

No Well or Septic
within 75' of Proposed
Activities

Archer Surveying LLC
18 Providence Road, Brooklyn, CT 06234
DAVID A. SMITH, PE 14173 DATE 03/20/2023
NOT VALID UNLESS SEAL IS AFFIXED HERETO

To my knowledge and belief, this map is substantially correct as noted herein.
Paul M. Archer, Conn. L.S. #70013
No certification is expressed or implied unless this map bears the embossed seal of the land surveyor whose signature appears hereon.

LEGEND

---	PROPERTY LINE
---	EASEMENT
-----	STONEWALL
-----	STONEWALL REMAINS
-----	SILT FENCE
-----	EXISTING INDEX CONTOUR
-----	EXISTING CONTOUR
-----	PROPOSED CONTOUR
-----	WETLANDS FLAG
-----	BUILDING SETBACK
-----	IRON PIN
-----	DRILL HOLE
-----	MONUMENT
-----	PERCOLATION TEST
-----	TEST PIT
-----	PROPERTY POINT
-----	UTILITY POLE

Notes

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Section 20-300b-20 and the "Standards for Surveys and Maps in State of Connecticut" as adopted by the Connecticut Associations of Land Surveyors, Inc. on September 26, 1946.
 - This Survey conforms to a Class "A-2" Horizontal Accuracy
 - Survey Type: Site Development
 - Boundary Determination: Resurvey
 - Intent: Site Plan
- Parcels shown as Lot 4-3 on Assessors Tax Map 35 of the Brooklyn Assessors Office.
- Property is owned by: John, Sarah, Elaine & Stephanie Turner
- There are no apparent wells within 75' of the proposed septic system. There are no apparent septic systems within 75' of the proposed well.
- If the proposed house will have any oversized tubs, the septic tank capacity shall be increased per the Connecticut Public Health Code.
- NDDH File No. 22000324
- Property is subject to a slope Easement along northerly property line
- Wetlands Flagged by Joseph Theroux, March 2023 and field located by Archer Surveying LLC

MAP REFERENCE:

- Subdivision of Kingswood Estates, Owner-Developer, David P. & Nancy M. Bell, Church Street, Brooklyn, Connecticut, Date: October 1, 1991, Prepared by: Albert L. Fitzback
- Kingswood Estates, Subdivision Map, Prepared for David P. Bell & Nancy M. Bell, Church Street, Brooklyn, Connecticut, Date: April 2020, Prepared by: PG Survey Associates

REVISIONS	
DATE	DESCRIPTION
03/20/23	Wetlands Flagging & Upland Review Line

Site Development Plan

Prepared For:
Stephanie Turner
Church Street
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'

ARCHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921
LOUIS J. SOJA, JR.
LAND SURVEYING-LAND PLANNING

Sheet No. 1 OF 2 Project No. AS 2206 Date: Feb. 20, 2023

EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. Soil Survey of Windham County Connecticut, U.S.D.A. Soil Conservation Service 1483.

DEVELOPMENT SCHEDULE (Individual Lots):

1. Prior to any work on site, the limits of disturbance shall be clearly flagged in the field by a Land Surveyor, licensed in the State of Connecticut. Once the limits of clearing are flagged, they shall be reviewed and approved by an agent of the Town.
2. Install and maintain erosion and sedimentation control devices as shown on these plans. All erosion control devices shall be inspected by an agent of the Town. Any additional erosion control devices required by the Town's Agent shall be installed and inspected prior to any construction on site. (See silt fence installation notes.)
3. Install construction entrance.
4. Construction will begin with clearing, grubbing and rough grading of the proposed site. The work will be confined to areas adjacent to the proposed building, septic system and driveway. Topsoil will be stockpiled on site and utilized during final grading.
5. Begin construction of the house, septic system and well.
6. Disturbed areas shall be seeded and stabilized as soon as possible to prevent erosion.
7. The site will be graded so that all possible trees on site will be saved to provide buffers to adjoining lots.

DEVELOPMENT CONTROL PLAN:

1. Development of the site will be performed by the Individual lot owner, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water and if necessary, the application of calcium chloride.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
6. Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the Inland Wetlands Commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
 - the fence has been overtopped, undercut or bypassed by runoff water,
 - the fence has been moved out of position (knocked over), or
 - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
 - the barrier has been overtopped, undercut or bypassed by runoff water,
 - the barrier has been moved out of position, or
 - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the clear marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure TS-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedlings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 45%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is dense enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 15 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, retilt compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
6. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until after adequate filtration of on-site waters has occurred.

- Segregate construction waters from clean water.
- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.
- Grade and landscape around buildings and septic systems to divert water away from them.

SEPTIC SYSTEM CONSTRUCTION NOTES

1. The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
2. Topsoil shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications are as follows:
 - Max. percent of gravel (material between No. 4 & 3 inch sieves) = 45%

GRADATION OF FILL (MINUS GRAVEL)

SIEVE SIZE	PERCENT PASSING (WET SIEVE)	PERCENT PASSING (DRY SIEVE)
No. 4	100%	100%
No. 10	70% - 100%	70% - 100%
No. 40	10% - 50%	10% - 75%
No. 100	0% - 20%	0% - 5%
No. 200	0% - 5%	0% - 2.5%

Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of ten feet (10') beyond the last leaching trench before tapering off.

3. Septic tank shall be two compartment precast 1000 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.

4. Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.

5. All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.

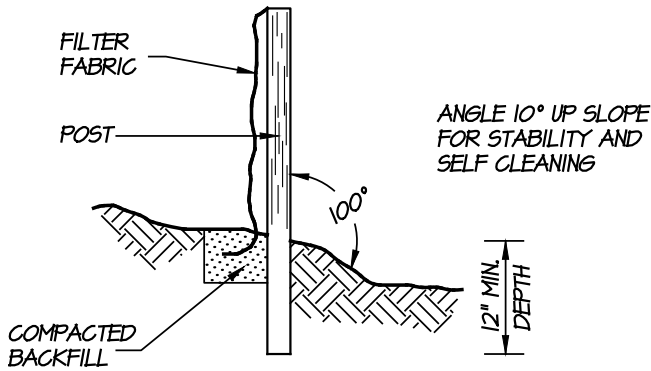
6. Solid distribution pipe shall be 4" diameter PVC meeting ASTM D-3054 SDR 35 with compression gasket joints. It shall be laid true to the lines and grades shown on the plans and in no case have a slope less than 0.125 inches per foot.

7. Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D-2124 or ASTM D-3350, 1500 lb. minimum crush.

8. Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1785. It shall be laid true to the grades shown on the plans and in no case shall have a slope less than 0.25 inches per foot.

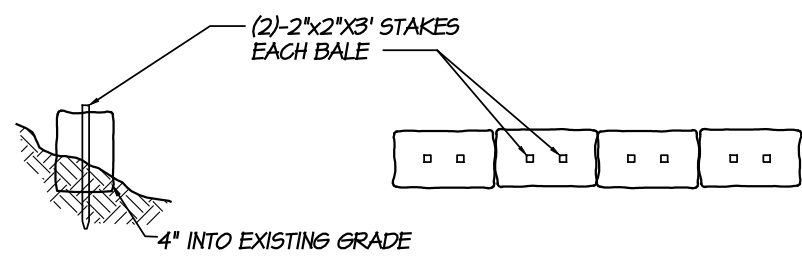
9. Force main pressure pipe from pump chamber to the leaching field shall be 2" diameter pvc meeting ASTM D 2241 SDR 21.

10. Solid footing drain outlet pipe shall be 4" Diameter PVC meeting ASTM D 3054, SDR 35 with compression gasketed joints. Footing drain outlet pipe shall not be backfilled with free draining material, such as gravel, broken stone, rock fragments, etc.



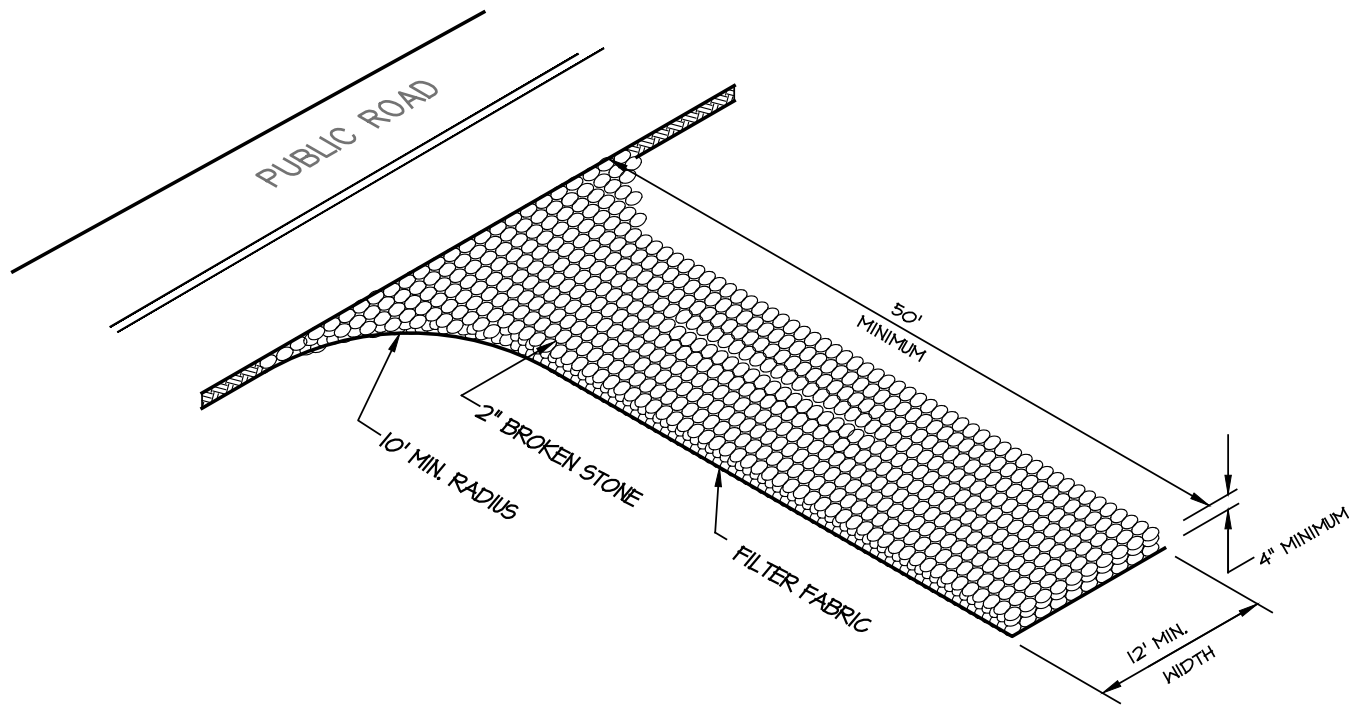
SILT FENCE

NOT TO SCALE



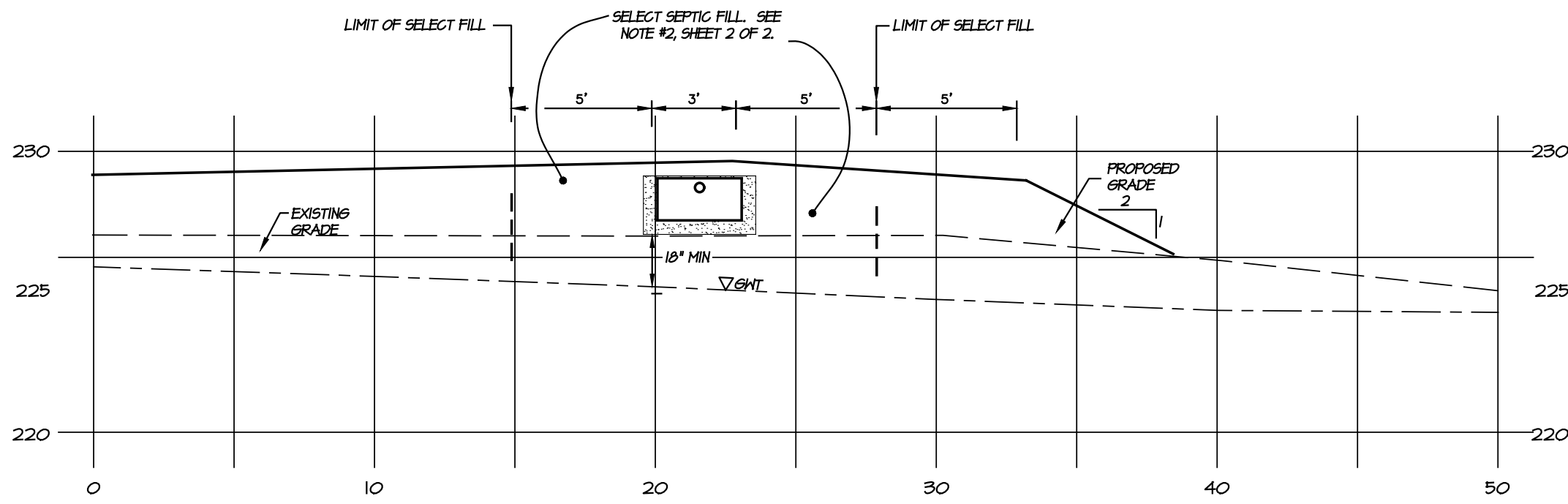
HAYBALE BARRIER

NOT TO SCALE



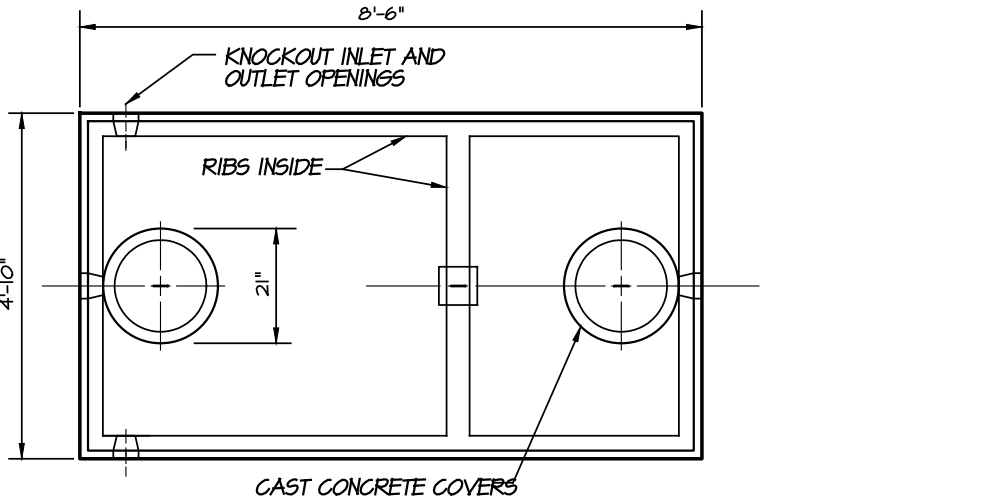
CONSTRUCTION ENTRANCE

NOT TO SCALE



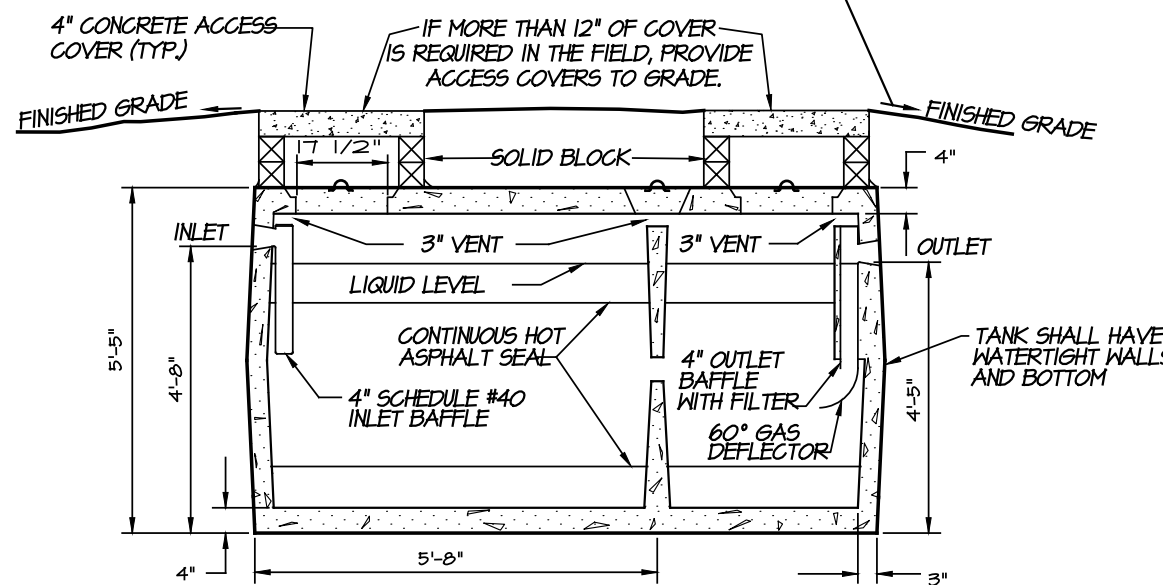
CROSS SECTION "A-A"

SCALE: 1" = 5'



PLAN

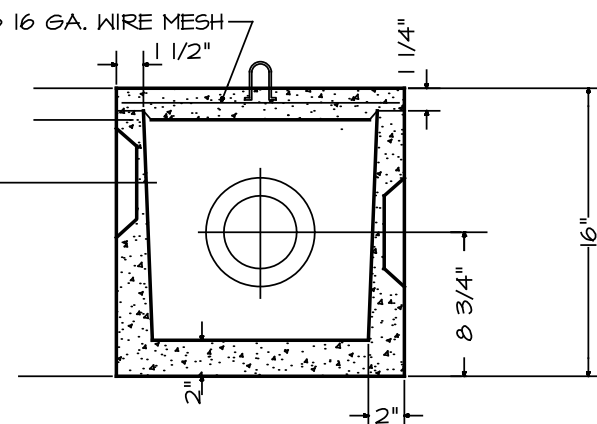
PROVIDE POSITIVE GRADE AWAY FROM MANHOLE COVER TO PREVENT GROUNDWATER FROM ENTERING CHAMBER



CROSS SECTION

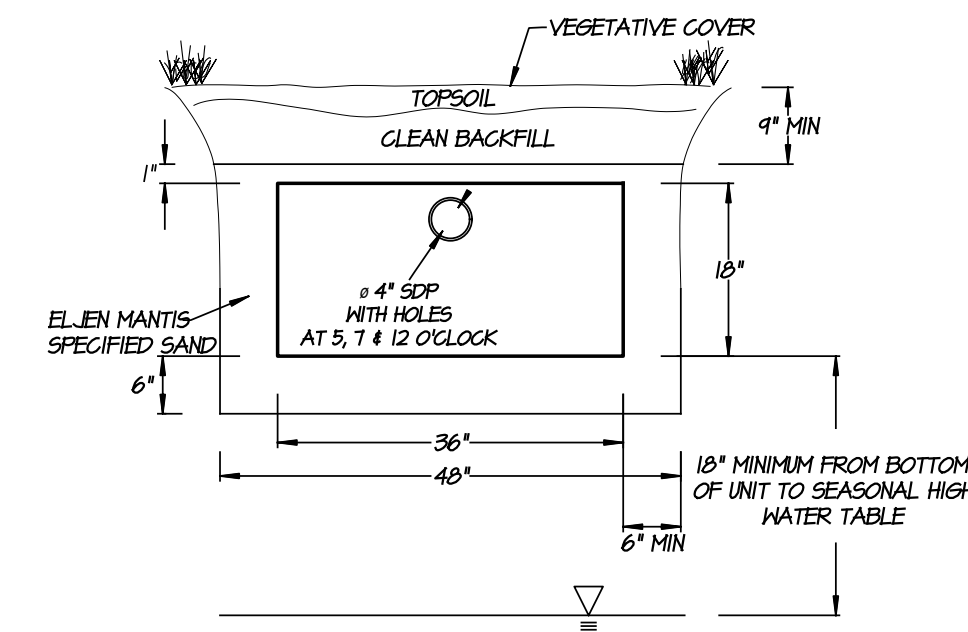
1000 GALLON
2 COMPARTMENT
SEPTIC TANK

NOT TO SCALE



STANDARD D-BOX

NOT TO SCALE



NOTE: VENTING REQUIRED WHEN MORE THAN 18\"/>

MANTIS 536-8 INSTALLATION

NOT TO SCALE

Site Development Plan
"Detail Sheet"

Prepared For:
Stephanie Turner
Church Street
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'

0 30 60

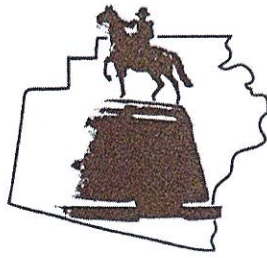
ARCHER Surveying LLC
18 Providence Road, Brooklyn, CT
(860) 779-2240 / (860) 928-1921

KWP **ARCHER**
SURVEYING - ENGINEERING - SITE PLANNING

LOUIS J. SOJA, JR.
LAND SURVEYING - LAND PLANNING

Sheet No. 2 OF 2 Project No. AS 2206 Date: Feb. 20, 2023

REVISIONS	
DATE	DESCRIPTION



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

map 14 Lot 9
Old Tatnic Hill Rd.

10/5/23

Address

Date

I met Sandra Blanchard, Chris
Casadei and Brian Meehan,
inspected and took photographs.

We started at the proposed log landing
on the Meehan property and walked
the proposed skid trail to the proposed
stream crossing.

There are no IWWC issues.

Approval is recommended.

Commission Representative

M. Washburn

Owner or Authorized Signature



NOTIFICATION OF TIMBER HARVESTTown: BrooklynDate: 9/24/23Property Location: Old Tainic Hill Rd

List all parcels:

Assessor's Info:

Map	Block	Lot
14		9

OR:

Unique ID

Total acreage of property(s): 53Total acreage of harvest area: 50Landowner(s) of Record: Elizabeth Seabury, etalMailing Address: 63 Fieldstone LaTown: Beacon Falls Zip 06403Phone (203) 751-0105

E-mail: _____

Primary Contact: Chris CasadeiMailing Address: see below

Town: _____ Zip _____

Phone () _____

E-mail: _____

Note: Timber harvesting is a *Permitted as of Right Activity* pursuant to the Inland Wetlands and Watercourses Act, except for those practices regulated under Section 22a-36 through 22a-45 of the Connecticut General Statutes.

Is there a current forest management/stewardship plan for this property? ☐ Yes ☒ No

This timber harvest has been prepared by a State of Connecticut certified:

(Check one): ☒ Forester OR ☐ Supervising Forest Products Harvester

Forest Practitioner Certificate #: F-463Name: Chris CasadeiAddress: 5 South St. Stonington, CT 06378E-mail: chriscasadei@gmail.comPhone #: (Business) _____ (Cell) 603-309-7819**Property Boundaries:**Bounds are marked: ☒ Yes ☐ No**Timber Harvest Boundaries:**Have been marked or flagged: ☒ Yes ☐ No

Have owners of all lands within 100 feet of the harvest area been notified via first-class mail prior to filing this "Notification of Timber Harvest"? ☐ Yes ☒ No

Estimated starting date of timber harvesting operations: 11 / 15 / 23**Description of Timber Harvest:**Objective: Remove unacceptable growing stock and establish natural regenerationTreatment: Selection Harvest

Amount of forest products to be harvested:

150mbf

Board feet

100

Cords

Cubic feet

Tons

How have the trees to be harvested been designated?

☒ They have been marked with paint at eye level and at ground level. Paint color(s): Blue☐ They have not been marked

This is not an official CT DEP form but it has been endorsed for town usage by: CT Farm Bureau Assoc., CT Forest & Park Assoc., CT Professional Timber Producers, Society of American Foresters - CT Chapter, and others.

SOIL, WATER AND INLAND WETLANDS RESOURCES**Actions Being Performed On This Land**

(Check all that apply and locate on attached Timber Harvest Area map – see information below on maps.)

<u>Crossings / Clearing</u> <input checked="" type="checkbox"/> Temporary stream/drainage crossing <input type="checkbox"/> Temporary wetlands crossing <input type="checkbox"/> Removal of trees in wetlands <input type="checkbox"/> Removal of trees in upland review area	<u>Erosion and Sedimentation Control Measures:</u> <input checked="" type="checkbox"/> Installation of water bars <input type="checkbox"/> Grading <input type="checkbox"/> Seeding <input type="checkbox"/> Other (describe below)
<u>Log landing area:</u> <input checked="" type="checkbox"/> Anti-tracking pad <input type="checkbox"/> curb cut	<u>Roads</u> Are new roads, other than skid trails, to be constructed for transport of logs or other activities associated with this harvest? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Describe in further detail as necessary:

This property was harvested approximately 22 years ago and the network of skid trails used then will be utilized then will be utilized again for this operation. There is one intermittent drainage crossing that will be stabilized with portable bridge sections and/or corduroy as needed and removed upon completion. All Best Management Practices regarding timber harvesting as adopted by CTDEEP shall be strictly adhered to.

The following maps are attached to this "Notification" (Check all that apply)

- ☐ Copy of USGS topographic map with property outlined
☐ Copy of Assessor's map with property outlined
☒ Timber Harvest Area map showing outline of harvest area, main skid road locations, log landing area, truck access roads, inland wetlands, watercourses and any crossings

The undersigned hereby swear that the information contained in this application is true, accurate and complete to the best of my (our) knowledge and belief and that the timber harvest will be conducted in accordance with the specifications outlined in this "Notification of Timber Harvest."

Signature of Landowner(s): Elizabeth Seabury Date: 9/26/2023

Elizabeth Seabury

Print/Type Name: _____

Signature of Landowner(s): Laura Teodosio Date: 9/26/2023

Laura Teodosio

Print/Type Name: _____

Signature of Certified Forest Practitioner: [Signature] Date: 9/26/23

Print Name: Chris Casadei

Certificate #: F-463 Expiration Date: 11 / 1 / 24

Complete and Submit to:

- The Municipal Inland Wetlands Agency/ies in which the property is located, and
- A courtesy copy of this Notification Form should also be sent to The Department of Environmental Protection, Division of Forestry 79 Elm Street, Hartford, CT, Tel: (860) 424-3630

This is not an official CT DEP form but it has been endorsed for town usage by: CT Farm Bureau Assoc., CT Forest & Park Assoc., CT Professional Timber Producers, Society of American Foresters - CT Chapter, and others.

Sig of Landowner
 Nicholas Teodosio
 9/26/23

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date 9/29/2023

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Chris Casadei MAILING ADDRESS 5 South St, Stonington, CT 06378
APPLICANT'S INTEREST IN PROPERTY Timber Harvest PHONE: CELL 603-309-7819 HOME: _____
E-MAIL christercasadei@gmail.com

PROPERTY OWNER IF DIFFERENT Elizabeth Seabury, etals PHONE: CELL: 203-751-0105 HOME: _____
MAILING ADDRESS 63 Fieldstone La, Beacon Falls, CT 06403 EMAIL btw1125@gmail.com

ENGINEER/SURVEYOR (IF ANY)
n/a

ATTORNEY (IF ANY) n/a

PROPERTY LOCATION/ADDRESS) Old Tatnic Hill Rd

MAP # 14 LOT # 9 ZONE RA TOTAL ACRES 52.34 ACRES OF WETLANDS ON PROPERTY approx 10

PURPOSE AND DESCRIPTION OF THE ACTIVITY

This activity involves a selective timber harvest, see attached Notification of Timber Harvest Form for more details.
All Best Management Practices as adopted by the CTDEEP shall regarding timber harvesting shall be strictly adhered to.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED 0 CUBIC YDS 0 SQ FT 0

EXCAVATION PROPOSED 0 CUBIC YDS 0 SQ FT 0

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE 0 OFF SITE 0

TOTAL REGULATED AREA ALTERED: SQ FT 0 ACRES 0

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):

n/a

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY 0 SQ FT 0 ACRES 0

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? no IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? no

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT:  DATE 9/29/23

OWNER: see Notification of Timber Harvest and Timber Sale Agreement DATE _____

REQUIREMENTS

_____ STANDARD APPLICATION FEE \$ (\$150) _____ STATE FEE (\$60) _____ CHECK # _____

_____ NOTICE OF ACTION PUBLICATION FEE \$ _____ CHECK # _____

_____ PUBLIC HEARING PUBLICATION FEE (\$100) \$ _____ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK# _____

_____ SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ _____ CHECK # _____

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - NUMBER TO BE DETERMINED BY STAFF

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

____ PERMIT REQUIRED:

____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

____ CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ AUTHORIZED BY IWWC

____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

____ NO PERMIT REQUIRED

____ OUTSIDE OF UPLAND REVIEW AREA

____ NO IMPACT

____ CHAIR, BROOKLYN IWWC

____ WETLANDS OFFICER

____ TIMBER HARVEST



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

GIS CODE #: _____
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____

2. ACTION TAKEN (see instructions - one code only): _____

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Brooklyn

does this project cross municipal boundaries (check one)? yes ☐ no ☒

if yes, list the other town(s) in which the activity is occurring (print name(s)): _____

6. LOCATION (see instructions for information): USGS quad name: Danielson or number: 43

subregional drainage basin number: 3711

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Chris Casadei

8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Seabury, etals, Old Tatnic Hill Rd

briefly describe the action/project/activity (check and print information): temporary ☒ permanent ☐ description: _____

9. ACTIVITY PURPOSE CODE (see instructions - one code only): G

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 12, 14, _____

11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):

wetlands: 0 acres open water body: 0 acres stream: 0 linear feet

12. UPLAND AREA ALTERED (must provide acres): 0 acres

13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

TIMBER SALE AGREEMENT

It is agreed between Elizabeth J. Seabury, Laura Teodosio and Nicholas Teodosio of 63 Fieldstone Lane, Beacon Falls, CT 06403, and hereinafter called the Sellers, and Chris Casadei, LLC, a New Hampshire Limited Liability Corporation, of 5 South Street, Stonington, CT 06378, hereinafter called the Purchaser, that the Purchaser shall buy from the Seller and the Seller shall sell to the Purchaser, certain designated standing trees or timber located on approximately 52.34 acres East of Tatnic Hill Road, in the Town of ~~Beacon Falls~~ ^{Brooklyn}, in the State of Connecticut as shown on the attached Timber Harvest Map. It is further agreed that the Purchaser may enter upon the land of the Seller for the purpose of cutting and removing such designated trees or timber, and is authorized to prosecute such work, on the area described above subject to the following conditions:

1. The price for the designated trees or timber to be harvested shall be determined by the attached price list entitled Seabury Stumpage Price List. Upon the start of the harvest the Sellers shall receive scale reports and stumpage payments on a weekly basis based on the mill tally via email with a hardcopy and check by USPS or ACH wire transfer available upon request. The stumpage payments shall be dispersed as follows; 50% to E.Seabury, 25% to L.Teodosio and 25% to N.Teodosio.
2. All trees or standing timber cut under this agreement shall be removed from the land of the Seller within 8 months of the date of the agreement. In the event of inappropriate ground conditions such as extended wet weather or heightened forest fire danger the Sellers or Purchaser reserve the right to suspend harvesting operations and shall grant an extension of this agreement, if needed, for the same period of time suspended.
3. The Seller hereby covenants and agrees that they are lawfully possessed of the above described goods, chattels, and personal property as their own property. The Sellers shall not enter into any concurrent contract involving the same area or period of time, relative to this property without the written consent of the Purchaser, not to include the sale of the land.
4. Trees sold to the Purchaser shall involve a Conservative Harvest with the objective to sustain and improve the overall health of the forest, capture the suitable timber asset and remove undesirable growing stock from the forested portion of the property. Upon acceptance of this Agreement and prior to commencing the harvest the trees to be harvested shall be marked in blue paint at eye level and at the base of the stump. The Purchaser shall determine the use of the harvested material and remove only material determined to be of commercial value as sawtimber, pulpwood or firewood.
5. The Purchaser agrees to indemnify and save harmless the Sellers from all claims of or liabilities asserted by third parties or governmental agencies for any acts directly within the Purchasers control for damages to property or persons through the actions or negligence of the Purchaser. Chris Casadei, LLC agrees to carry a minimum of \$1,000,000.00 General Liability Insurance and \$500,000.00 Workmen's Compensation Insurance for the duration of the harvest and to provide the Seller with certificates of insurance confirming said insurance coverage, and to name all Sellers as an additional insured on such policies for the period of harvest.
6. Care shall be exercised in the felling, cutting and removal operations so that undesignated standing trees will not be unnecessarily damaged.

7. Excessive rutting (greater than 8" in depth) shall be repaired by the Purchaser. The existing access roads will be left in the condition found or better by the Purchaser.

8. Purchaser shall take precautions to prevent spillage of petroleum products or hazardous materials while refueling or performing maintenance on harvesting equipment.
The Purchaser shall indemnify and hold the Seller harmless for any and all damages, including attorney fees and civil penalties, for which the Seller may become liable as a result of any such spillage.

9. All trees designated for removal by the Purchaser shall be cut as low as possible in an effort to maximize the forest product harvested and achieve a residual stump height of less than half the diameter at breast height of said tree.

10. The Purchaser shall be responsible for following all rules and regulations regarding the harvest of forest products in the State of Connecticut and the Town of Brooklyn and for obtaining all permits required for the harvest.

11. The Purchaser agrees to slash the tops from the timber harvested to reduce the height of the branches and non-merchantable portions of the trees harvested as to not to exceed three feet above ground level on the property of the Seller.

12. In the case of a dispute over the terms of this agreement, a final decision shall rest with a reputable person, to be mutually agreed upon by the parties to this agreement. In the case of further disagreement, an arbitration board of three people will be selected, one by each party to the agreement and the third selected by those two, and the decision of the majority shall be final with respect either to acts to be done or compensation to be paid by either party to the other.

13. Both parties agree that no person shall be subject to unlawful discrimination based on race; national or ethnic origin; color; sex; religion; age; sexual orientation; gender expression or identity; pregnancy; marital status; familial status; economic status or source of income; mental or physical disability or perceived disability; or military service in programs, activities, services, benefits, or employment in connection with this Contract. The parties further agree not to discriminate in their employment or personnel policies.

Dated this 9th day of SEPTEMBER 2023

Sellers

By Elizabeth J. Seabury
Elizabeth J. Seabury
Landowner

By Laura Teodosio
Laura Teodosio
Landowner

By Nicholas Teodosio
Nicholas Teodosio
Landowner

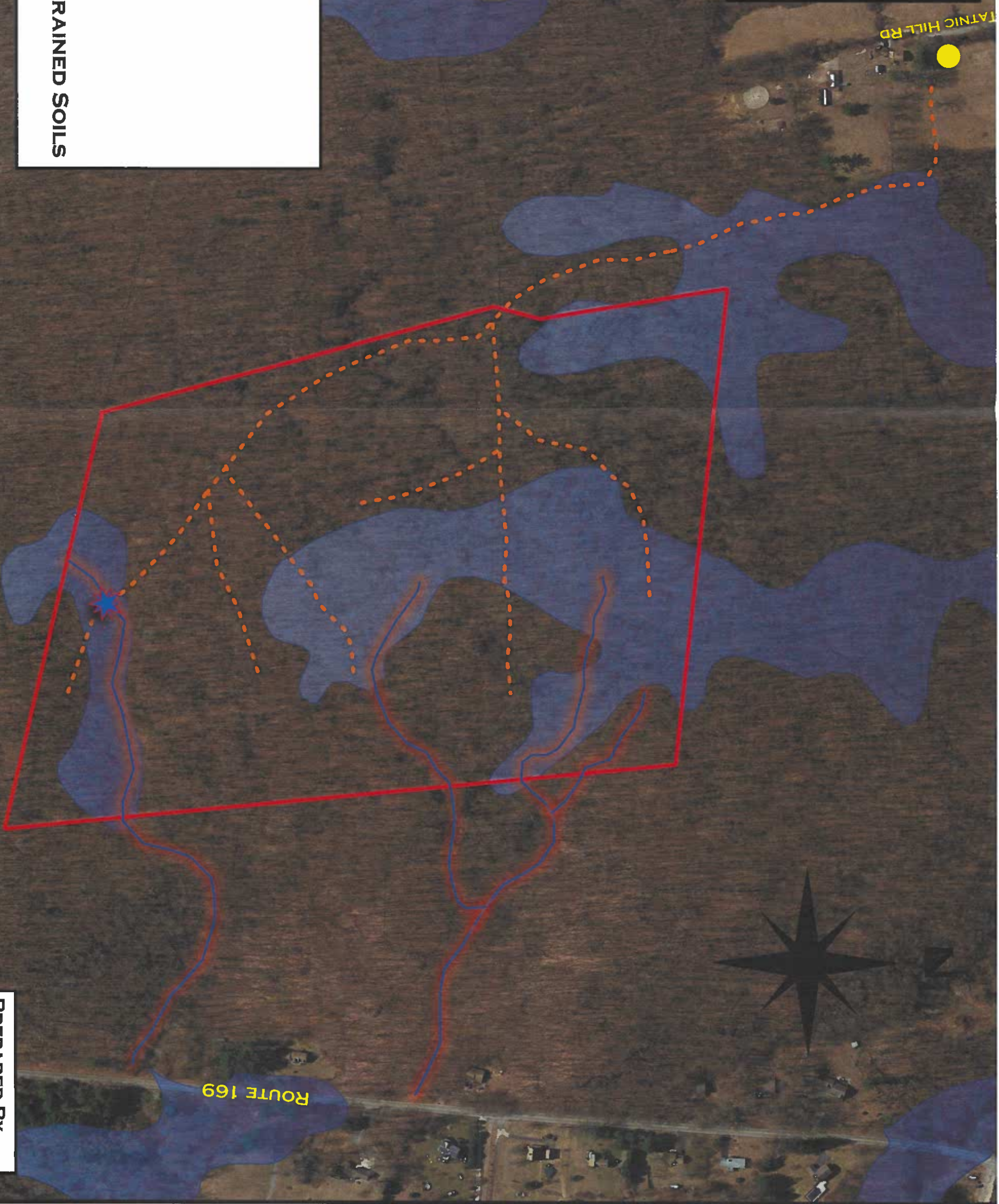
Purchaser

By Christopher J. Casadei
Christopher J. Casadei
Owner

TIMBER HARVEST MAP
PROPERTY OF
E. SEABURY, L. TEODOSIO
&
N. TEODOSIO
OLD TATNIC HILL RD
BROOKLYN, CT
52.34 AC

LEGEND

- PROPERTY BOUNDARY
- YARDING AREA
- - - MAIN SKID TRAIL
- - - INTERMITTENT DRAINAGE
- ✱ TEMPORARY CROSSING
- POORLY OR VERY POORL DRAINED SOILS



PREPARED BY
C.CASADEI
CTDEEP#F-463
JUNE 2023

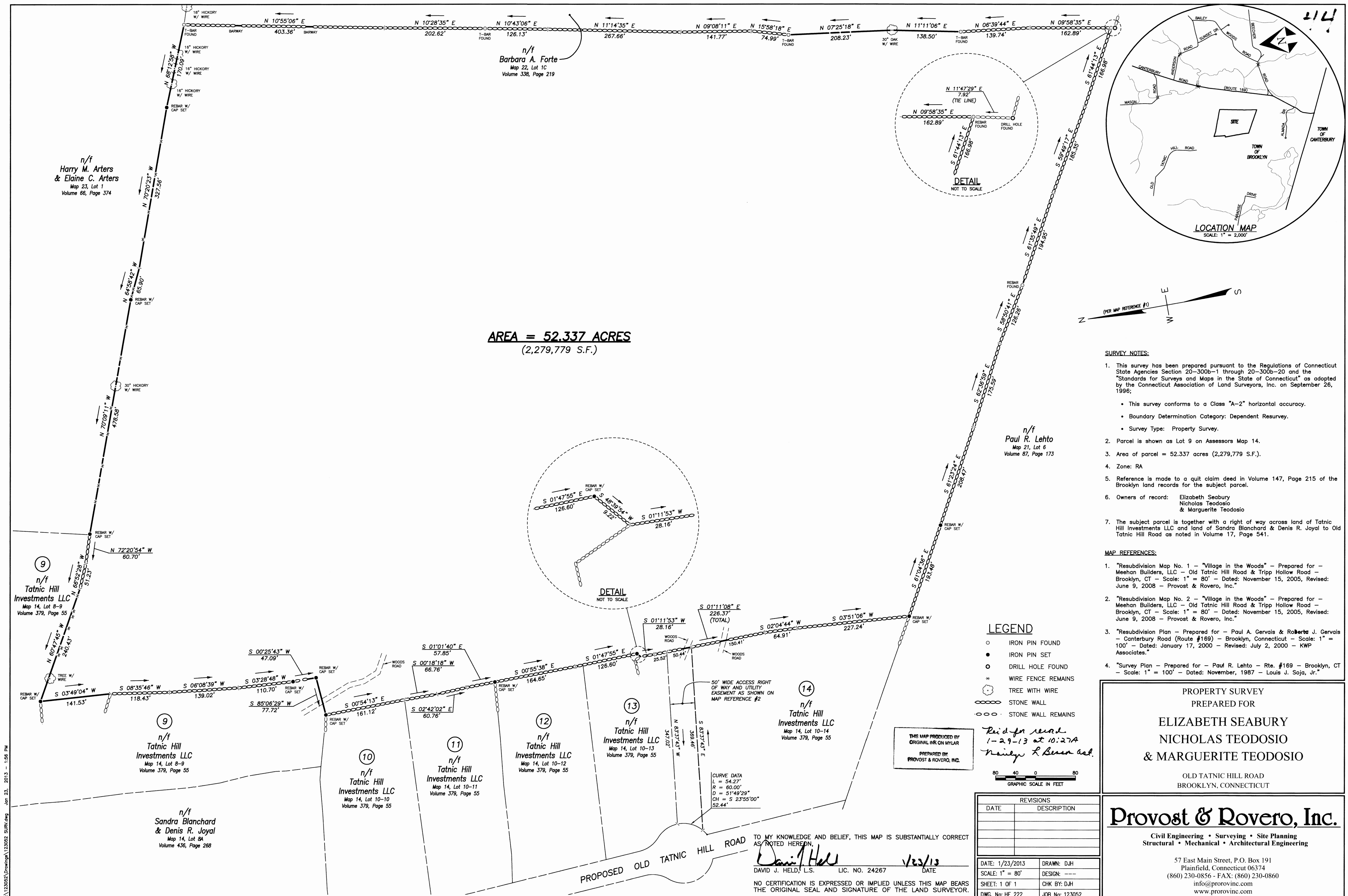
TIMBER HARVEST MAP
PROPERTY OF
E. SEABURY, L. TEODOSIO
&
N. TEODOSIO
OLD TATNIC HILL RD
BROOKLYN, CT
52.34 AC

LEGEND

- PROPERTY BOUNDARY
- YARDING AREA
- MAIN SKID TRAIL
- INTERMITTENT DRAINAGE
- TEMPORARY CROSSING
- POORLY OR VERY POORL DRAINED SOILS



PREPARED BY
C.CASADEI
CTDEEP#F-463
JUNE 2023



PROPERTY SERVICE	NOV 21 1944
OLD TOWN HILL RD. SEASIDE -	



To all People to whom these Presents shall come, Greeting:

KNOW YE, THAT WE, KATHRYN F. RAHN, of Cheshire, CT, KRISTINE F. GEDDES
of Woodbury, CT, KAREN F. CRAIG, of Naugatuck, CT and KENNETH W. FLISHER,
JR. of Waterbury, CT

for the consideration of TWENTY FIVE THOUSAND and no/100-----(\$25,000.00)

received to our full satisfaction of THOMAS SEABURY, ELIZABETH SEABURY,
NICHOLAS TEODOSIO and MARGEURITE TEODOSIO,

do give, grant, bargain, sell and confirm unto the said THOMAS SEABURY, ELIZABETH
SEABURY, NICHOLAS TEODOSIO and MARGEURITE, AS TENANTS IN COMMON, And Not As Joint
Tenants

Tract or parcel of wood lying and being situated in the
Town of Brooklyn, County of Windham and State of Connecticut, bounded
and described as follows, to wit:

situated in the westerly part of said Town of Brooklyn, on Tatnick
Hill (so-called) and bounded on the West by land of Charles A. Parker,
the line being a stone wall; and on the North by land of said Parker
and land formerly of Charles E. Young, the boundary line being a wire
fence; and on the East by land of Homer G. Beecher; and on the South
by land of Andrew T. J. Clark, containing about thirty five (35)
acres be the same more or less.

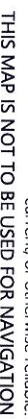
With a right of way across the pasture to the end of the land, leading
past the dwelling house of Charles A. Parker, to the highway, to and
from said wood lot, with or without teams.

Being the same premises conveyed to the within grantors by Quit Claim
Deed of Kathleen G. Flisher dated February 21, 1986 and recorded in
Vol. 82, Page 118 of the Brooklyn Land Records.

The grantees by the acceptance of this deed agree to assume and pay t
taxes due the Town of Brooklyn on the Assessment List of October 1,
1986 and thereafter.

\$112.50 State Tax Collected

59/4
\$27 Conveyance Tax Received
Thompson





neccog

Neccog GIS Site



Legend

- Town
- Buildings 2012
- Parcels
- Wetlands
 - Alluvial and Floodplain Soils
 - Poorly Drained and Very Poorly Dr

1: 9,028



0.3 0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Map 14 Lot 9
Timber Harvest Seabury/Teodosio
Chris Casadie

**INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT**

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Nicole Wineland-Thomson Fisher MAILING ADDRESS 53 Barnard Ave, Watertown, MA 02472
APPLICANT'S INTEREST IN PROPERTY _____ PHONE: CELL 617-955-7734 HOME: _____
E-MAIL Nicole.winelandthomson@gmail.com

PROPERTY OWNER IF DIFFERENT _____ PHONE: CELL: _____ HOME: _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY)

Daniel Blanchette, J&D Civil Engineers LLC

ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS) 459 Wolf Den Road

MAP # 18 LOT # 18A & B ZONE RA TOTAL ACRES 97 ACRES OF WETLANDS ON PROPERTY 20 +/-

PURPOSE AND DESCRIPTION OF THE ACTIVITY

The applicant is proposing to construct a gravel road and gravel parking lot for 40 cars for their wedding and event venue.
The majority of the parking lot is located within the upland review area. One small pocket of wetlands will be permanently filled.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED yes CUBIC YDS 12 SQ FT 310

EXCAVATION PROPOSED no CUBIC YDS _____ SQ FT _____

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE yes OFF SITE _____

TOTAL REGULATED AREA ALTERED: SQ FT 49,160 ACRES 1.13

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):

The originally approved parking lot was located near the road, but that location is not visually appealing and may impact the neighboring houses. Another design was evaluated in the flatter area below the currently proposed design, however that would involve too much wetland disturbance. The currently proposed design involves very minor wetland disturbance but is less of a nuisance to neighbors.

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQ FT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? no IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? no

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: _____ DATE 10/1/2023

OWNER: _____ DATE 10/1/2023

REQUIREMENTS

- ☒ STANDARD APPLICATION FEE \$ (\$150) _____ STATE FEE (\$60) _____ CHECK # _____
- ☒ NOTICE OF ACTION PUBLICATION FEE \$ _____ CHECK # _____
- ☒ PUBLIC HEARING PUBLICATION FEE (\$100) \$ _____ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK# _____
- ☒ SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ _____ CHECK # _____
- ☒ COMPLETION OF CT DEEP REPORTING FORM
- ☒ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - **NUMBER TO BE DETERMINED BY STAFF**
- ☒ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY
- ☒ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED **SOIL SCIENTIST IDENTIFY THE WETLANDS.**
- ☒ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL
- _____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:
- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
 - ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:
APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST

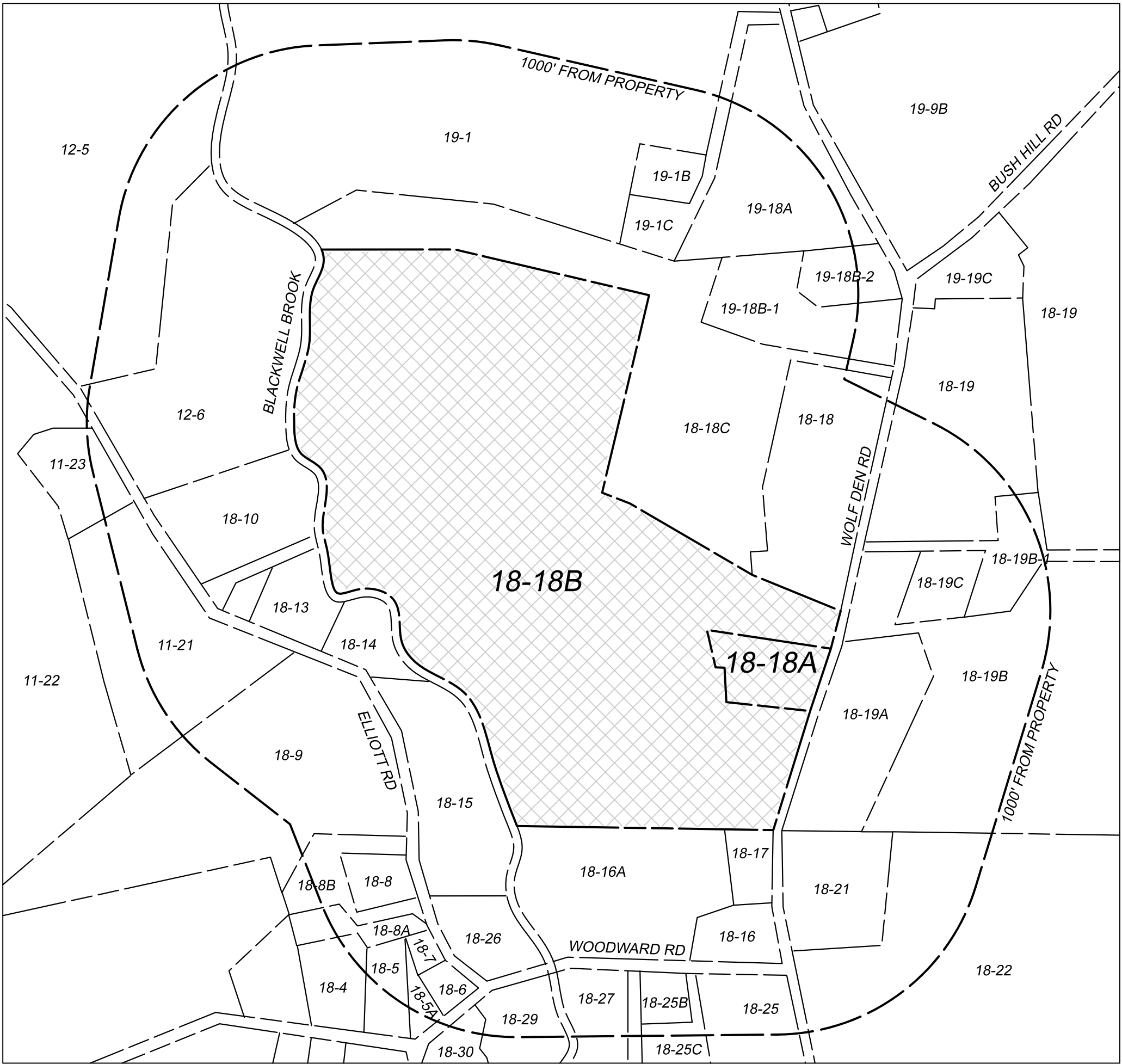
**SITE PLAN MODIFICATION FOR
SPECIAL PERMIT # 22-007
FOR WEDDING/EVENT VENUE FOR
WILLOW HILL LLC
459 WOLF DEN ROAD
BROOKLYN, CONNECTICUT
DATED: SEPTEMBER 29, 2023**

PREPARED FOR:

WILLOW HILL LLC, CARE OF
NICOLE WINELAND-THOMSON FISHER
AND GREGORY FISHER
53 BARNARD AVENUE
WATERTOWN, MA 02472

INDEX OF DRAWINGS

- 1 COVER
- 2 ACCESS DRIVEWAY AND PARKING LOT PLAN
- 3 EVENT AREA PLAN
- 4 NOTES AND DETAILS
- 5 DRIVEWAY AND PARKING LOT DETAILS



LOCATION MAP
1" = 500'

ZONE: RESIDENTIAL AGRICULTURAL (RA)
USE: SPECIAL EVENTS

ITEM	REQUIRED	EXISTING	PROPOSED
FRONTAGE	150'	>336'	> 336'
FRONT SETBACK	50'	115'	115'
SIDE SETBACK	40'	5'	5'
REAR SETBACK	50'	293'	293'
LOT SIZE	2 ACRES	4+ ACRES	4+ ACRES
EVENT SETBACK*	200'	77.6'	77.6'
PARKING SPACES	57	15	59

*A VARIANCE WAS OBTAINED TO REDUCE THIS SETBACK REQUIREMENT

SPECIAL PERMIT APPROVAL BY THE BROOKLYN
PLANNING AND ZONING COMMISSION

TOWN OF BROOKLYN
RECEIVED FOR RECORDING

CHAIRMAN

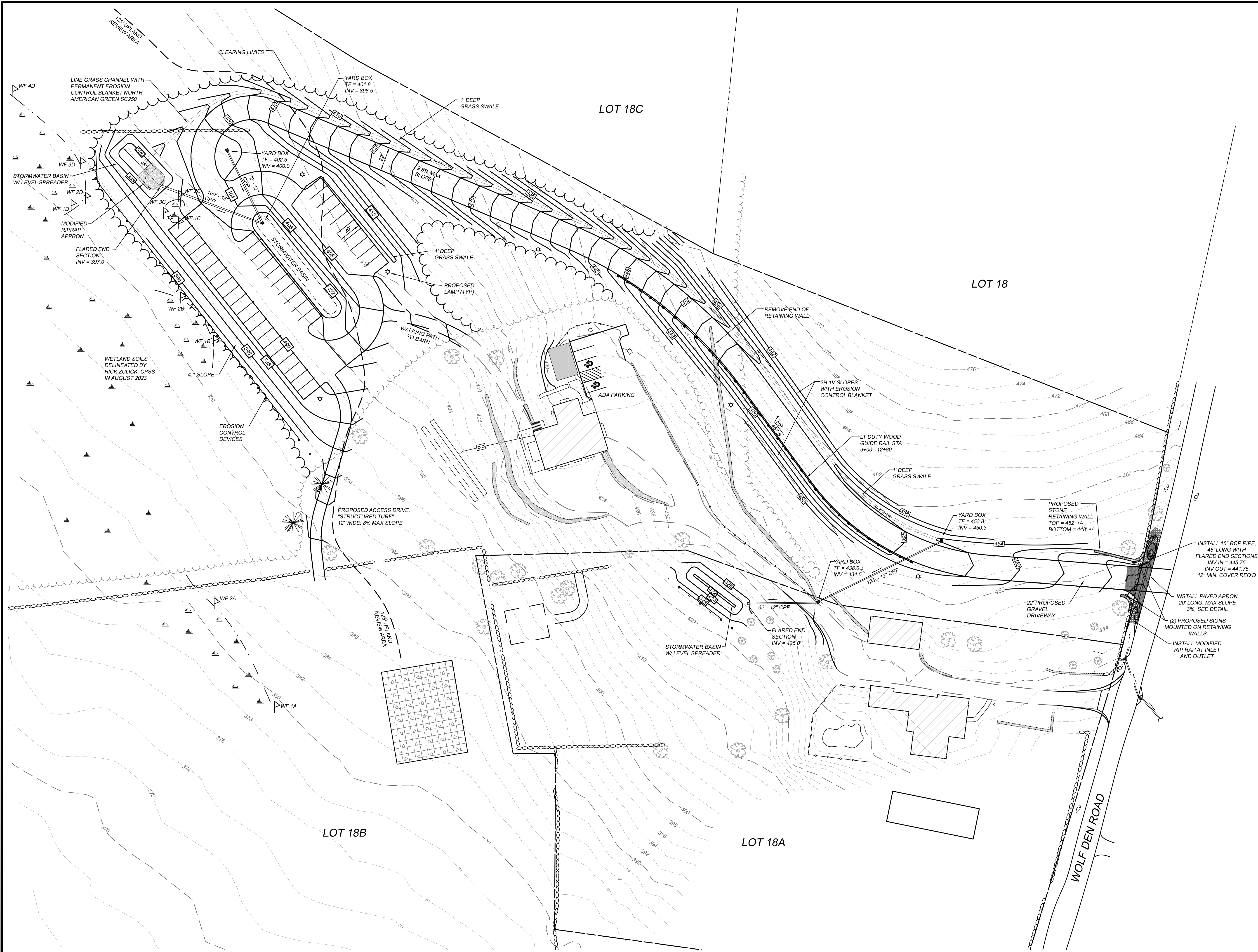
DATE

TOWN CLERK DATE TIME MAP #

**J & D CIVIL
ENGINEERS, LLC**

**401 RAVENELLE ROAD
THOMPSON, CT 06255**

**JDCIVILENGINEERS.COM
860-923-2920**



SURVEY NOTES

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

SURVEY TYPE: GENERAL LOCATION

PURPOSE: SITE DEVELOPMENT

BOUNDARY DETERMINATION CATEGORY: NONE

HORIZONTAL ACCURACY: CLASS B

VERTICAL ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY/BOUNDARY OR LIMITED PROPERTY/BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12/07/2023 LICENSE NUMBER 12107

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
© 2023 J&D CIVIL ENGINEERS, LLC

LEGEND

- BUILDING SETBACK LINE
- PROPERTY LINE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED CONTOUR LINE
- STONEWALL
- UTILITIES
- TREELINE
- FENCE
- SILT FENCE OR SILT SOCK

ACCESS DRIVEWAY AND PARKING LOT PLAN

PREPARED FOR

WILLOW HILL LLC

459 WOLF DEN ROAD, BROOKLYN, CT

MAP 15 - LOTS 18 & 18A

J&D CIVIL ENGINEERS, LLC

401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB
CHECKED: DRB

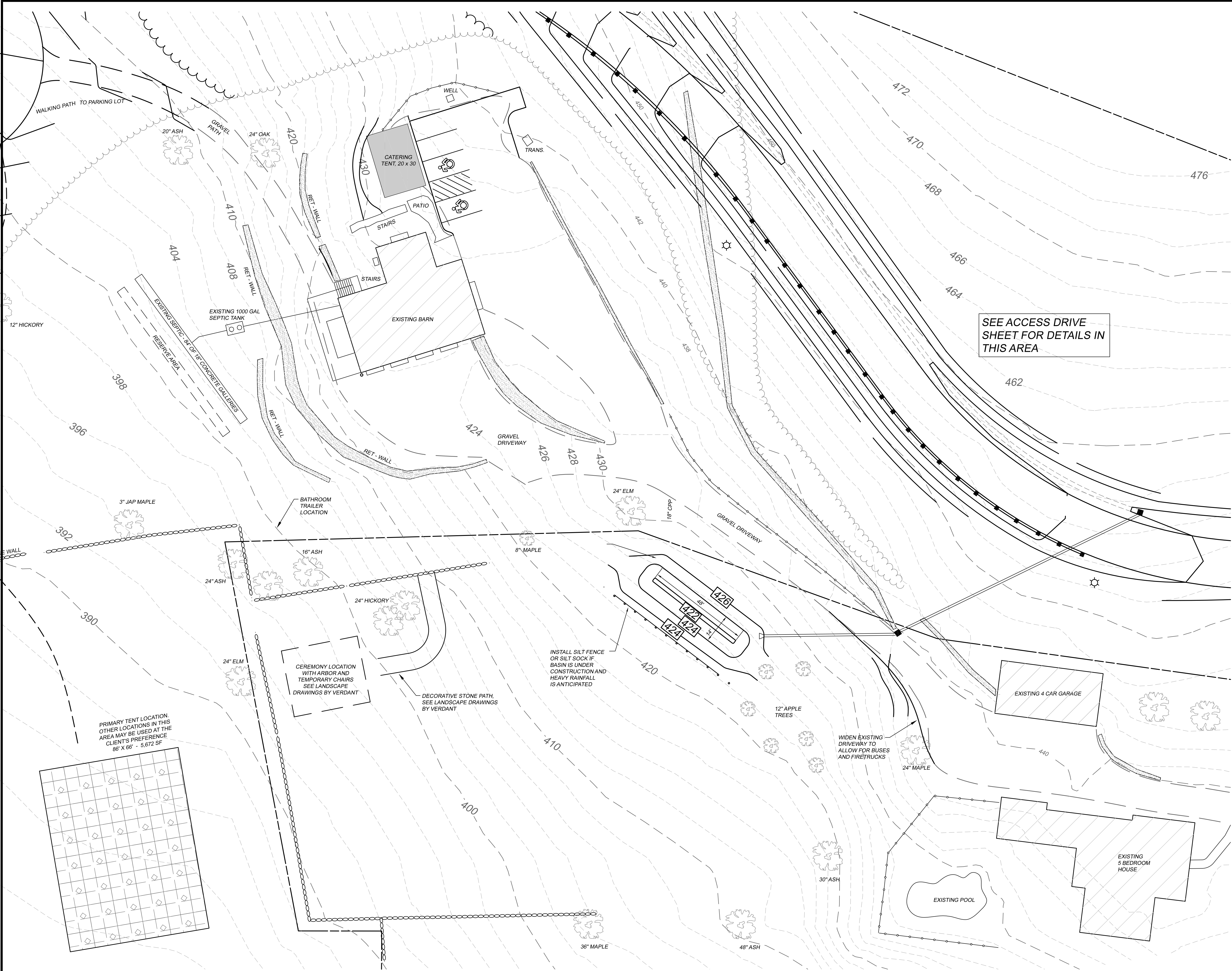
REVISIONS:

JOB NO: 22172

DATE: SEPTEMBER 29, 2023

SCALE: 1" = 40'

SHEET: 2 OF 6



SURVEY NOTES

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

SURVEY TYPE: GENERAL LOCATION

PURPOSE: TO DEPICT EXISTING CONDITIONS

BOUNDARY DETERMINATION CATEGORY: NONE

HORIZONTAL ACCURACY: CLASS B

VERTICAL ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION.

THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY/BOUNDARY OR LIMITED PROPERTY/BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DENNIS R. BLANCHETTE DATE 12107
LICENSE
NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE
© 2023 J&D CIVIL ENGINEERS, LLC

LEGEND

- BUILDING SETBACK LINE
- PROPERTY LINE
- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED CONTOUR LINE
- LEACHING TRENCH
- STONEWALL
- UTILITIES
- TREELINE
- FENCE

EVENT AREA PLAN

PREPARED FOR

WILLOW HILL LLC

459 WOLF DEN ROAD, BROOKLYN, CT

MAP 18 - LOTS 18 & 18A

J&D

CIVIL
ENGINEERS, LLC

401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: DDB
CHECKED: DRB

REVISIONS:

JOB NO: 22172

SCALE: 1" = 20'

DATE: SEPTEMBER 29, 2023

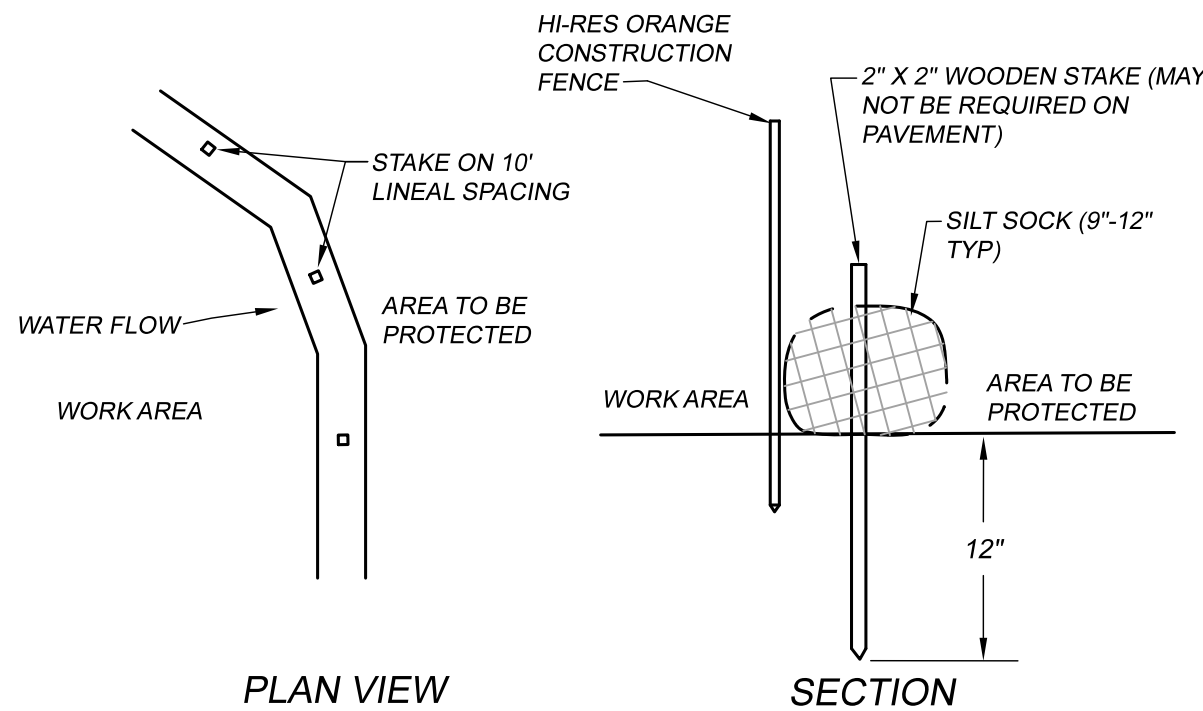
SHEET: 3 OF 5

PROJECT DESCRIPTION:

1. THE APPLICANT IS PROPOSING TO HOLD WEDDINGS, BANQUETS, AND OTHER SIMILAR EVENTS AT THE PROPERTY. THE MAXIMUM NUMBER OF GUESTS SHALL BE LIMITED TO 225 PERSONS.
2. THE EXISTING FIVE BEDROOM HOUSE SHALL BE USED AS A PRIVATE RESIDENCE BY THE OWNER AND APPLICANT.
3. THE EXISTING BARN MAY BE USED TO HOLD SMALLER EVENTS. ADDITIONALLY, A TEMPORARY TENT OR TENTS MAY BE INSTALLED TO HOLD LARGER EVENTS.
4. GUESTS SHALL NOT BE ALLOWED TO USE THE RESTROOMS INSIDE THE BARN. A PORTABLE RESTROOM TRAILER SHALL BE DELIVERED TO THE SITE FOR ALL EVENTS.
5. NO FOOD SHALL BE PREPARED ON SITE. ALL FOOD SHALL BE PROFESSIONALLY CATERED AND DELIVERED TO THE SITE.
6. NO NEW BUILDINGS ARE PROPOSED WITH THIS APPLICATION. THE ONLY CONSTRUCTION SHALL CONSIST OF DRIVEWAYS, PARKING LOTS, DRAINAGE STRUCTURES, UTILITIES, AND LANDSCAPING.
7. THE MAXIMUM NUMBER OF EVENTS TO BE HELD IN A TWELVE MONTH PERIOD IS ESTIMATED AT 70 EVENTS WITH AMPLIFIED MUSIC, AND 30 EVENTS WITHOUT AMPLIFIED MUSIC.
8. NO SINGLE EVENT SHALL LAST FOR MORE THAN 3 CONSECUTIVE DAYS.
9. AMPLIFIED MUSIC, BOTH INDOOR AND OUTDOOR, SHALL BE TURNED OFF AT 10:00 PM
10. THE MAXIMUM OCCUPANCY OF THE BARN SHALL BE 110 PERSONS. THE MAXIMUM OCCUPANCY OF A TEMPORARY TENT SHALL BE 225 PERSONS.

SIGN NOTES

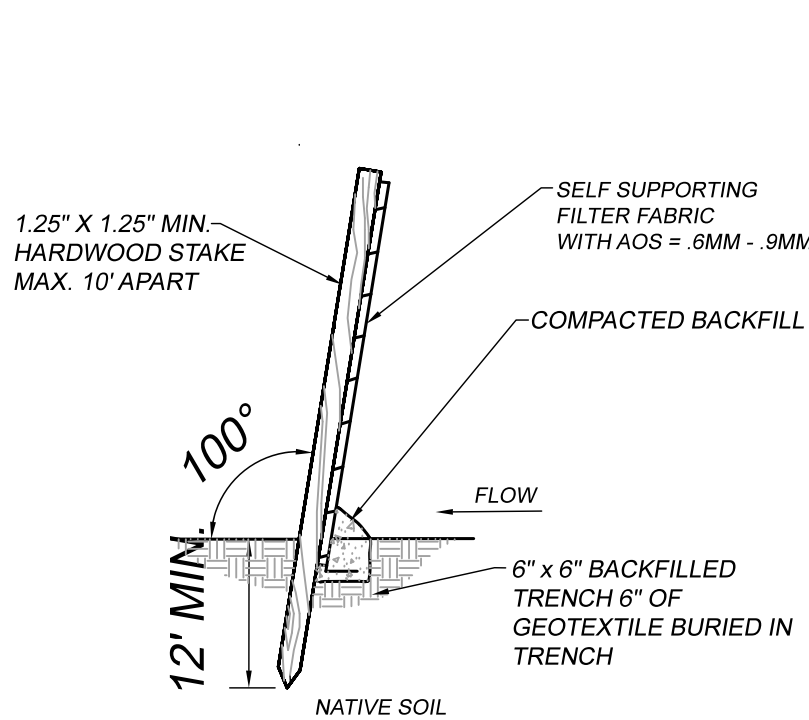
1. THE APPLICANT IS PROPOSING TO INSTALL TWO SIGNS AT THE NEW ENTRANCE TO THE SITE.
2. EACH SIGN SHALL BE LESS THAN 3 FEET LONG AND LESS THAN 1 FOOT HIGH.
3. SIGNS SHALL BE MOUNTED ON RETAINING WALLS, AT A HEIGHT OF 2-3 FEET.
4. NO LIGHTING IS PROPOSED FOR THE SIGNS.
5. SIGNAGE SHALL COMPLY WITH ALL REQUIREMENTS IN 7.A.3.1 OF THE BROOKLYN ZONING REGULATIONS.



NOTES

1. SILT SOCK MANUFACTURER SHALL BE SILT SOXX OR ENGINEER APPROVED EQUAL
2. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS
3. SEDIMENT SILT SOCK TO BE FILLED WITH LEAF COMPOST AND/OR WOODY MULCH PER MANUFACTURER'S REQUIREMENTS
4. FOLLOWING CONSTRUCTION AND SITE STABILIZATION, COMPOST MATERIAL SHALL BE REMOVED OR DISPERSED ON SITE, AS APPROVED BY THE ENGINEER

SILT SOCK DETAIL
NOT TO SCALE



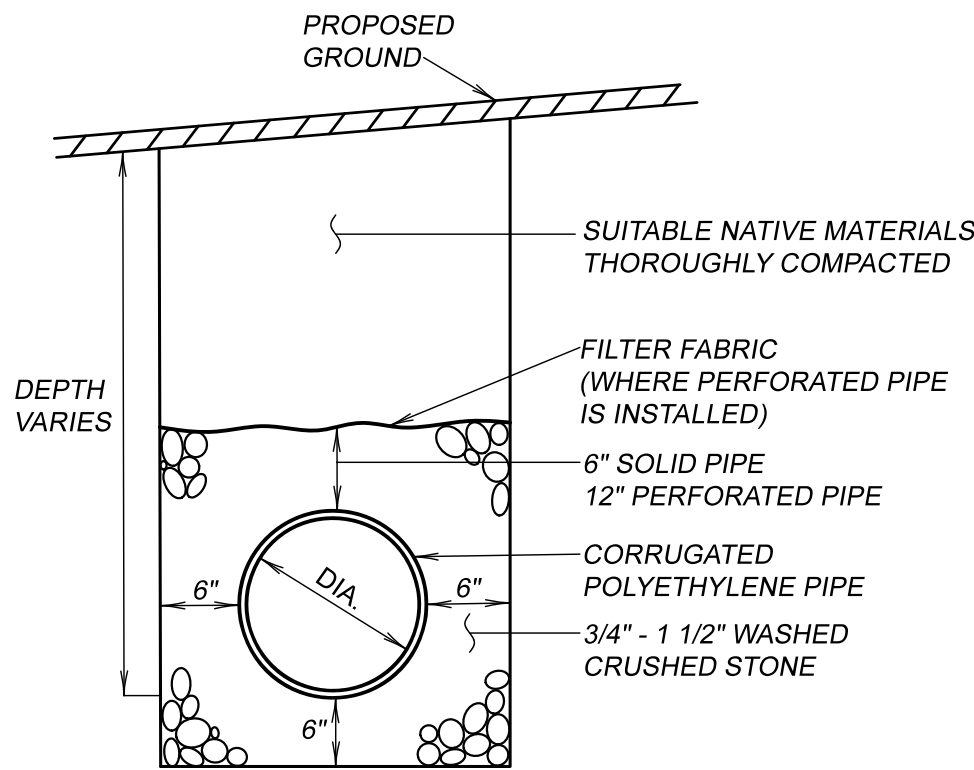
SILT FENCE INSTALLATION
NOT TO SCALE

NEIGHBORHOOD AGREEMENT:

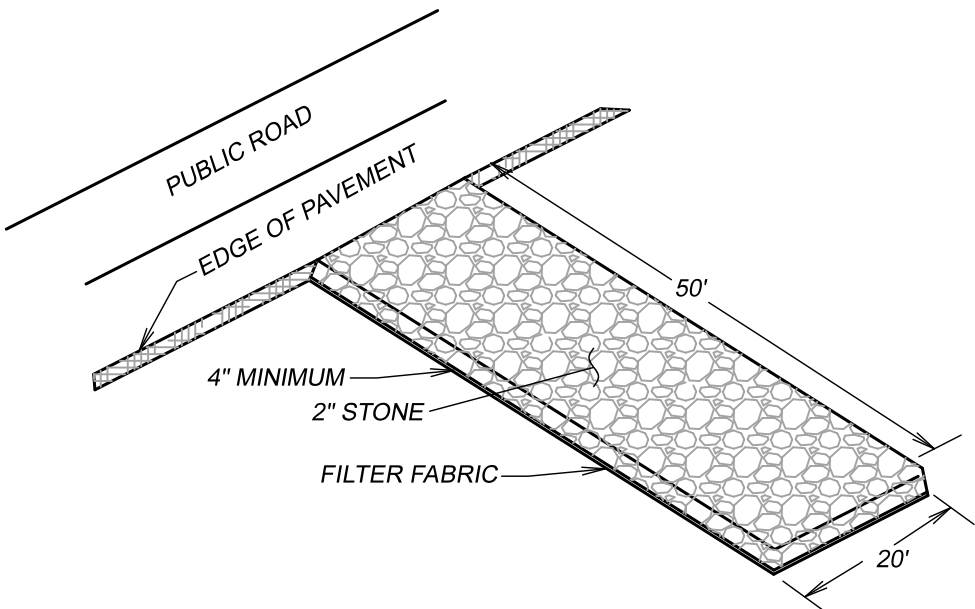
THE APPLICANTS HAVE MET WITH THEIR ABUTTERS AND AGREED TO THE FOLLOWING TERMS FOR THIS PROJECT:

1. LIMIT WEEKEND EVENTS TO ONE OUTDOOR EVENT WITH AMPLIFIED ENTERTAINMENT PER WEEKEND, WHERE WEEKEND IS DEFINED AS FRIDAY-SATURDAY-SUNDAY.
2. NOISE LEVELS SHALL NOT EXCEED 55 dB DURING THE DAY AND 45 dB AFTER 10:00 PM, AS MEASURED AT THE PROPERTY LINES THAT ADJACENT NEIGHBORS AND RUN ALONG WOLF DEN ROAD. SEE CT GENERAL STATUTES 22A-69
3. ON STREET PARKING BY GUESTS AND VENDORS SHALL BE PROHIBITED.
4. THERE SHALL BE NO MORE THAN 2 FIREWORKS DISPLAYS DURING THE CALENDAR YEAR. FIREWORKS DISPLAYS MUST BE RUN BY LICENSED PROFESSIONALS. FIREWORKS SHALL OTHERWISE NOT BE ALLOWED BY GUESTS.
5. RESIDENTS WITHIN 2,500 FEET OF THE PROPERTY IN ALL DIRECTIONS SHALL BE NOTIFIED AT LEAST 10 DAYS PRIOR TO UPCOMING FIREWORKS DISPLAYS.
6. FIREARMS SHALL BE PROHIBITED ON THE PROPERTY DURING ALL EVENTS.
7. OUTDOOR FIRES SHALL ONLY BE ALLOWED IN THE FIREPIT, WHICH WILL BE STARTED AND MAINTAINED BY THE OWNERS OR THEIR EMPLOYEES, AND OUTDOOR GRILL WILL BE AVAILABLE FOR USE ON THE PROPERTY.
8. RENTERS ARE RESPONSIBLE FOR REMOVING ALL EVIDENCE OF THE EVENT UPON CONCLUSION OF THE EVENT OR AS SOON AS REASONABLY FEASIBLE AFTER THE CONCLUSION OF THE EVENT. THIS INCLUDES TRASH, TENTS, FURNITURE, EQUIPMENT, PORTABLE TOILETS, AND ANYTHING ELSE WHICH IS VISIBLE FROM THE ROAD THAT HAS BEEN BROUGHT TO THE VENUE.
9. ALL RENTERS OF THE PROPERTY WILL AGREE TO AND SIGN A CONTRACT FOR USAGE OF THE PREMISES, WHICH WILL INCLUDE BUT NOT BE LIMITED TO THE RESTRICTIONS ABOVE. IT WILL ASK THEM TO COMMIT TO RESPECTING THE LOCAL RESIDENTS AND SURROUNDING NEIGHBORHOODS WITH RESPECT TO NOISE, TRASH, AND DRIVING SPEED.
10. OUTDOOR LIGHTING SHALL ONLY BE TURNED ON DURING EVENTS WHEN NECESSARY.
11. ALL OUTDOOR LIGHTING SHALL BE DARK SKY COMPLIANT (IDA SEAL OF APPROVAL), AND MUST COMPLY WITH TOWN AND STATE SAFETY REQUIREMENTS. TO THE GREATEST EXTENT FEASIBLE, OUTDOOR LIGHTING SHALL BE DOWNCAST AND DIRECTED AWAY FROM THE ROAD AND ADJUTING PROPERTIES.
12. THERE SHALL BE AN ANNUAL MEETING WITH NEIGHBORS TO REVIEW THE SPECIAL PERMIT AND TO ENSURE THAT THE ABOVE CONDITIONS AS WELL AS THE INTERESTS OF PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE OF THE NEIGHBORING RESIDENTS ARE BEING MET. ANY DISPUTE THAT CANNOT BE RESOLVED THROUGH DIRECT DIALOGUE SHALL BE BROUGHT TO THE COMMISSION FOR RESOLUTION.

DRAINAGE PIPE INSTALLATION
DETAIL



N.T.S.



TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE

GENERAL CONSTRUCTION NOTES:

LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. THE CONTRACTOR SHALL NOTIFY CALL BEFORE YOU DIG AND FIELD VERIFY THE LOCATION, DEPTH AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC.

CONSTRUCTION SHALL BE IN CONFORMANCE WITH CONNDOT FORM 818 UNLESS OTHERWISE NOTED ON THE PLANS. UTILITY INSTALLATION SHALL BE IN CONFORMANCE WITH THE APPROPRIATE UTILITY COMPANY.

THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH EACH UTILITY AND ALL COSTS ASSOCIATED WITH THE PROTECTION OF EXISTING FACILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE ALL EXISTING PIPING UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

TYPICAL DETAILS SHOWN ARE TO ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY SUBMIT PROPOSALS FOR ALTERNATE METHODS TO SUIT FIELD CONDITIONS.

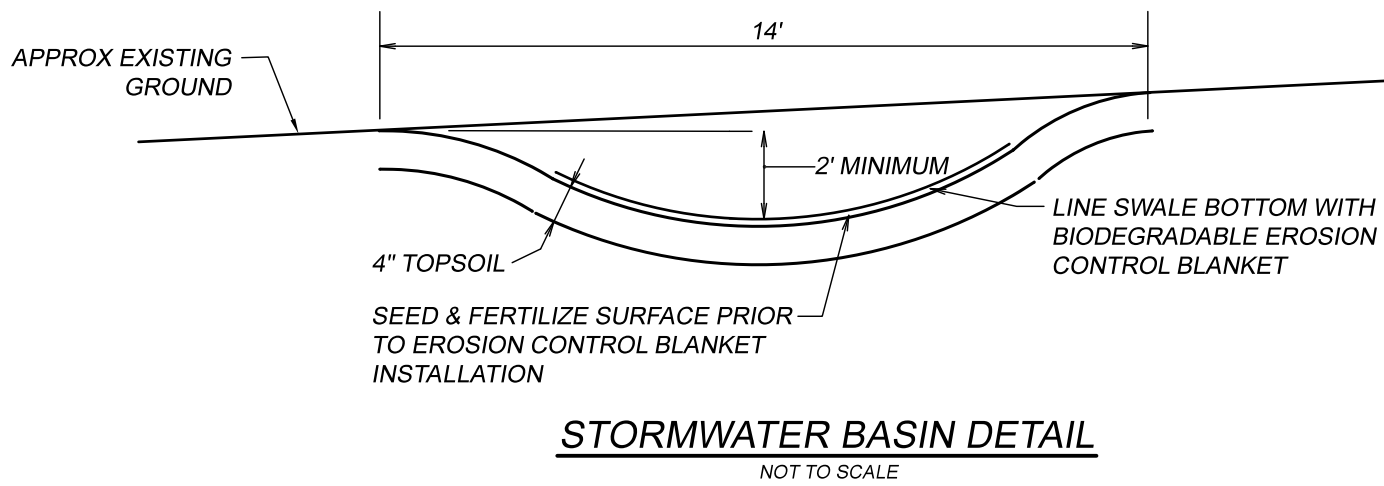
ALL PIPING SHALL HAVE WARNING TAPE INSTALLED. IN ADDITION, ALL NONMETALLIC PIPE MUST BE PARALLELED BY A METALLIC WIRE OR METALLIC DETECTION TAPE FOR EASE OF LOCATING.

ALL PIPING SHALL BE CLEANED AND TESTED IN ACCORDANCE WITH THE APPLICABLE UTILITY'S REQUIREMENTS. COPIES OF ALL TESTS SHALL BE PROVIDED TO THE OWNER PRIOR TO ACCEPTANCE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TESTING EQUIPMENT.

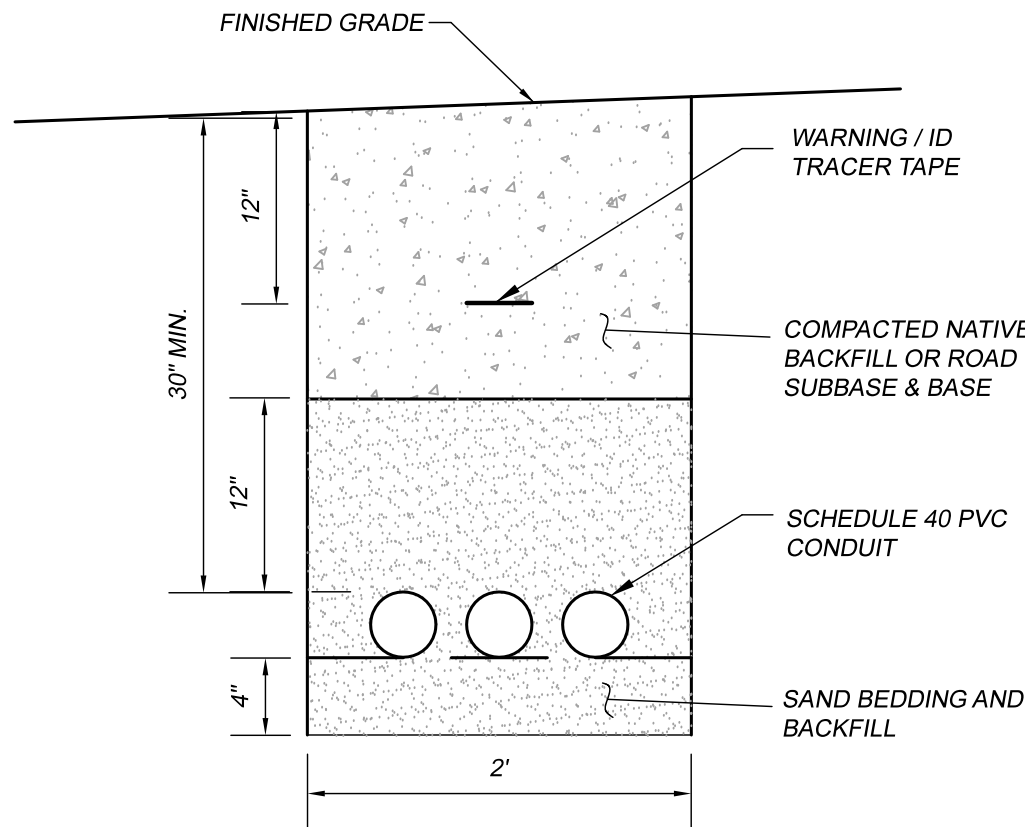
ALL TRENCHING SHALL BE DONE IN COMPLIANCE WITH OSHA REGULATIONS AND THE INSTALLATION REQUIREMENTS OF THE PIPE MANUFACTURER. IF SHORING IS REQUIRED, IT MUST BE DESIGNED BY A LICENSED CT PROFESSIONAL ENGINEER.

BENCHMARKS WILL BE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR IN LAYING OUT THE PROJECT. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

THE CONTRACTOR SHALL PROTECT BENCHMARKS, PROPERTY CORNERS AND SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. ANY SUCH ITEMS WHICH NEED TO BE REPLACED SHALL BE AT THE CONTRACTOR'S EXPENSE.



STORMWATER BASIN DETAIL
NOT TO SCALE



- 1) NUMBER AND SIZE OF CONDUITS SHALL BE AS REQUIRED BY OWNER & UTILITY COMPANY
- 2) CONSTRUCTION METHODS, MATERIALS & DIMENSIONS SHALL CONFORM TO THE SPECIFICATIONS OF THE APPLICABLE UTILITY COMPANIES

TYPICAL UTILITY TRENCH DETAIL
NOT TO SCALE

SOIL EROSION AND SEDIMENT CONTROL

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A VENUE FOR WEDDINGS AND OTHER SIMILAR EVENTS. SITE WORK WILL INCLUDE CONSTRUCTION OF ACCESS DRIVEWAYS, PARKING AREAS, DRAINAGE STRUCTURES, AND NECESSARY UTILITIES.

ATTENTION SHALL BE GIVEN TO THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES. NO ERODED SEDIMENTS SHALL BE PERMITTED TO FLOW OFF THE SITE. IF FIELD CONDITIONS WARRANT IT OR THE TOWN REQUESTS IT, ADDITIONAL E & S CONTROL MEASURES, BEYOND WHAT IS SHOWN ON THE PLAN, SHALL BE INSTALLED.

THE SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES WILL BE APPROXIMATELY AS FOLLOWS:

1. INSTALLATION OF EROSION CONTROL DEVICES
2. CLEARING & GRUBBING
3. ROUGH SITE GRADING
4. INSTALLATION OF UTILITIES INCLUDING DRAINAGE PIPES AND CB'S
5. PREPARATION OF ACCESS DRIVEWAYS AND PARKING LOT BASE
6. AFTER SITE IS STABILIZED, CONSTRUCT DRAINAGE BASIN
7. PERMANENT STABILIZATION INCLUDING LANDSCAPING
8. REMOVAL OF EROSION CONTROL MEASURES

SEDIMENT AND EROSION CONTROL DEVICES WILL BE INSTALLED AS DETAILED ON THIS SHEET AND CHECKED REGULARLY FOR REPLACEMENT AND AFTER EVERY RAIN FOR REMOVAL OF DEPOSITED MATERIALS. RESPONSIBILITY FOR COMPLIANCE WITH THIS PLAN SHALL BELONG TO THE CONTRACTOR. THE CONTRACTOR SHALL BE THE DESIGNATED ON-SITE AGENT RESPONSIBLE FOR ENSURING TO THE TOWN THAT E & S CONTROL MEASURES ARE STRICTLY ENFORCED.

CATCH BASINS SHALL BE PROTECTED WITH FILTER FABRIC AND/OR SURROUNDED BY SILT SOCKS DURING CONSTRUCTION, WHEN DISTURBED AREAS ARE NOT STABILIZED.

OPERATIONS AND MAINTENANCE

1. ALL PROPOSED WORK SHALL CONFORM TO "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL OF SOIL AND WATER CONSERVATION AND TOWN REGULATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE GOALS OF THIS EROSION CONTROL PLAN ARE MET BY WHATEVER MEANS ARE NECESSARY. THE CONTRACTOR SHALL PLAN ALL LAND DISTURBING ACTIVITIES IN A MANNER AS TO MINIMIZE THE EXTENT OF DISTURBED AREAS.
3. PRIOR TO CONSTRUCTION OR EXCAVATION, SEDIMENT BARRIERS SHALL BE INSTALLED IN LOCATIONS AS SHOWN ON THE PLAN OR AS REQUIRED BY THE TOWN AND MAINTAINED THROUGHOUT CONSTRUCTION.
4. UPON FINAL GRADING, DISTURBED AREAS SHALL COVERED WITH A MINIMUM OF 6" LOAM AND SEEDED WITH PERENNIAL GRASSES AS SPECIFIED FOR THE PROJECT. IMMEDIATELY AFTER SEEDING, MULCH THE SEEDED AREA WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE. SEEDING DATES ARE TO BE BETWEEN APRIL 1 THRU JUNE 15 AND AUGUST 15 THRU OCTOBER 15.
5. DAILY INSPECTIONS SHALL BE MADE OF EROSION AND SEDIMENT CONTROL MEASURES TO INSURE EFFECTIVENESS AND IMMEDIATE CORRECTIVE ACTION SHALL BE TAKEN IF FAILURE OCCURS. ADDITIONAL EROSION CONTROL MEASURES BEYOND WHAT IS SHOWN ON THE PLAN MAY BE NECESSARY.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN STABILIZED AND VEGETATIVE COVER HAS BEEN ESTABLISHED, AT WHICH TIME THEY SHALL BE REMOVED.
7. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THIS EROSION AND SEDIMENT CONTROL PLAN.

LIGHTING NOTES

1. LAMP POSTS SHALL BE INSTALLED SOUTH OF THE PROPOSED 40 CAR PARKING LOT, AS INDICATED ON THE SITE PLANS.
2. THE SPECIFIC MANUFACTURER AND MODEL OF LIGHT IS TO BE DETERMINED. LAMP POSTS SHALL BE OF A RURAL OR RUSTIC STYLE.
3. LAMPS SHALL BE INSTALLED ON POLES 10-12 FEET TALL.
4. LAMPS SHALL BE FULL CUTOFF, WITH LED BULBS.
5. LAMP INTENSITY SHALL BE IN THE RANGE OF 8,000 - 12,000 LUMENS, OR 80-120 WATTS.
6. LAMP TEMPERATURE SHALL BE APPROXIMATELY 5,000 K.
7. ALL LAMPS SHALL CONFORM WITH THE REQUIREMENTS IN SECTION 7.G OF THE BROOKLYN ZONING REGULATIONS.
8. ALL LAMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
9. SUFFICIENT EXTERIOR LIGHTING EXISTS ON ALL OTHER PORTIONS OF THE SITE, SUCH AS THE BUILDINGS AND DRIVEWAY.
10. THE PROPOSED LIGHTING IS EXPECTED TO PROVIDE LESS THAN 1 FOOT-CANDLE AT THE PROPERTY LINES.

LANDSCAPING NOTES:

ALL LANDSCAPING ON SITE SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED LANDSCAPING PLANS BY "VERDANT LANDSCAPE ARCHITECTURE." THESE PLANS HAVE BEEN INCLUDED WITH THE APPLICATION PACKAGE.

NOTES AND DETAILS
PREPARED FOR
WILLOW HILL EVENTS
459 WOLF DEN ROAD, BROOKLYN, CT
MAP 15 - LOTS 15 & 15A

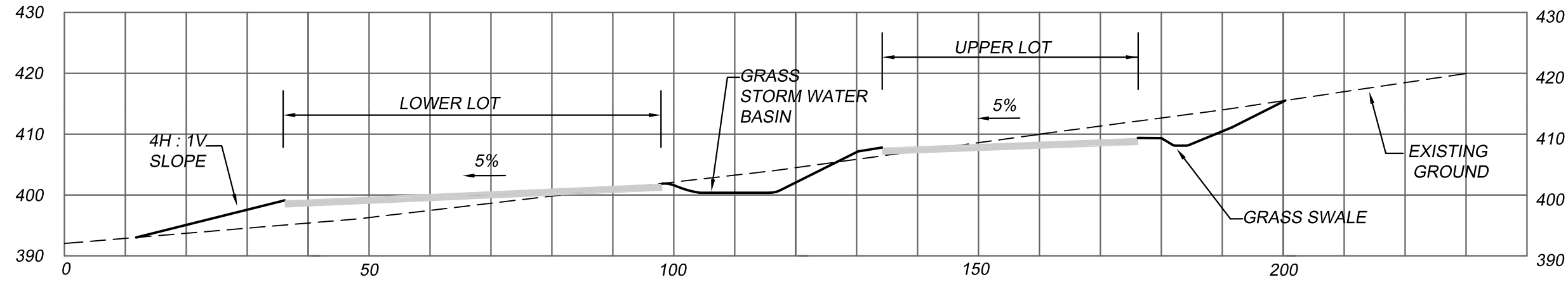
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DESIGNED: DDB
CHECKED: DRB

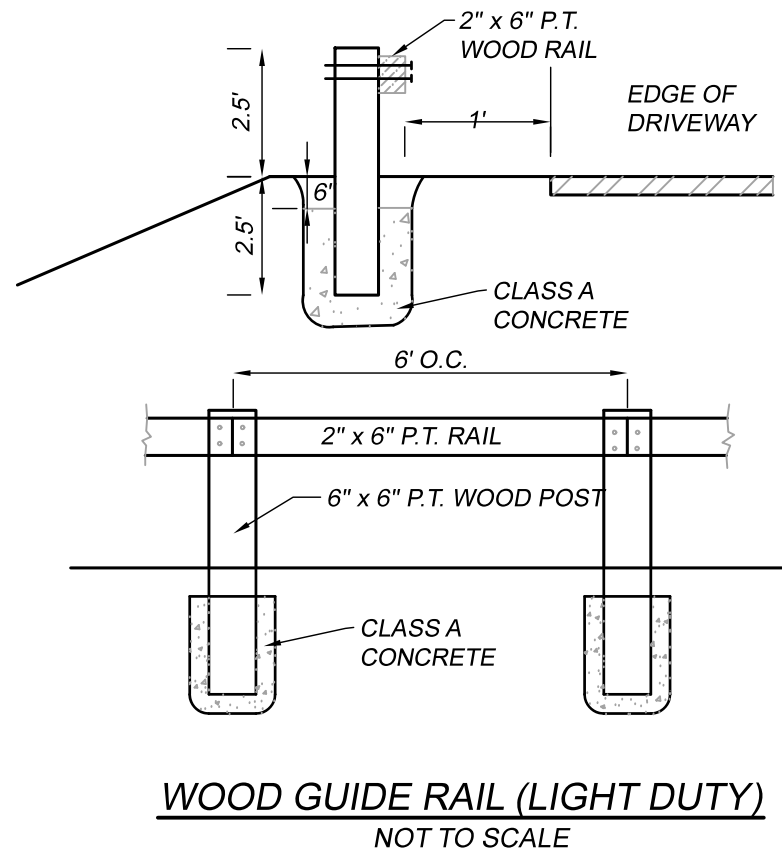
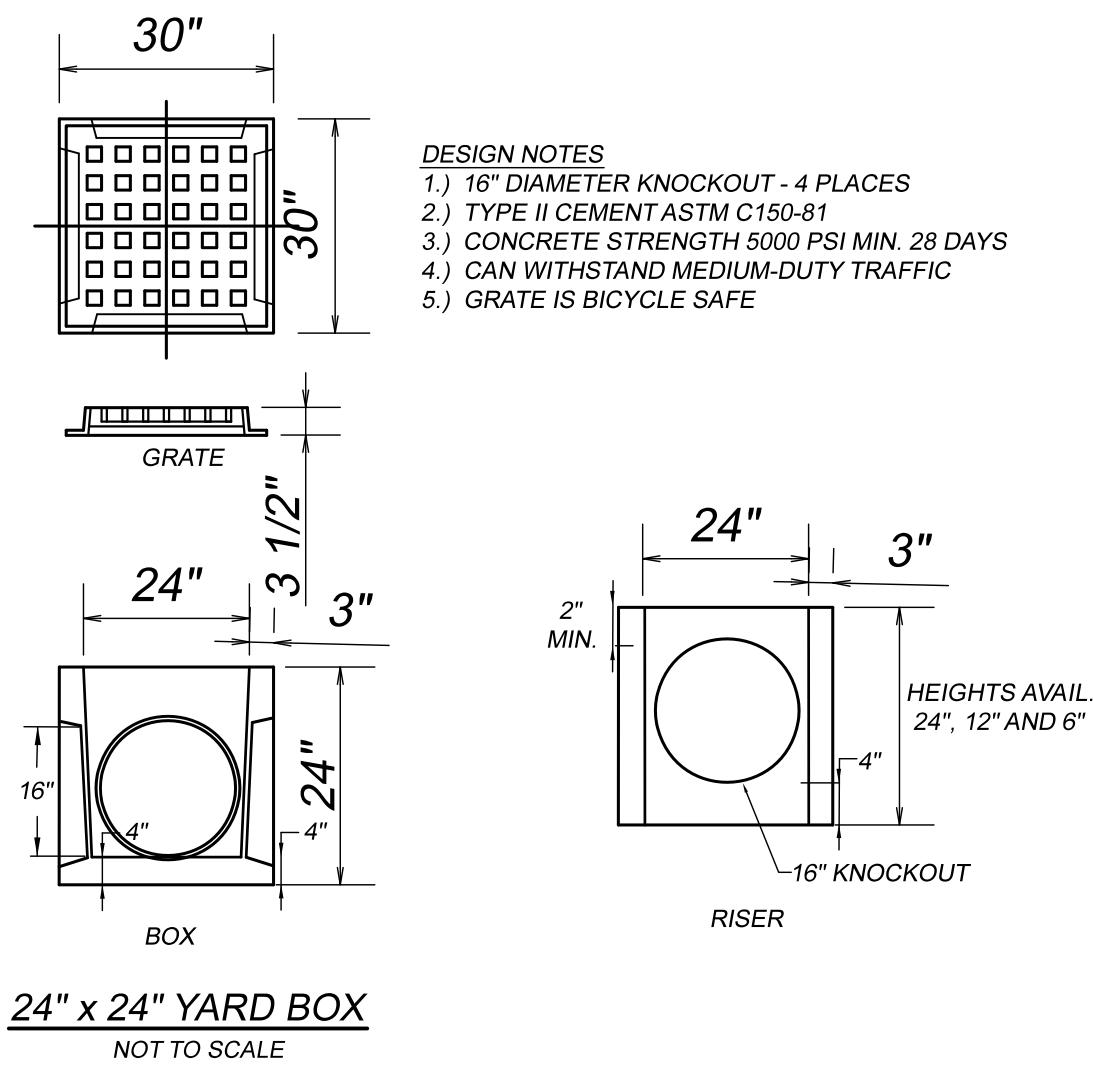
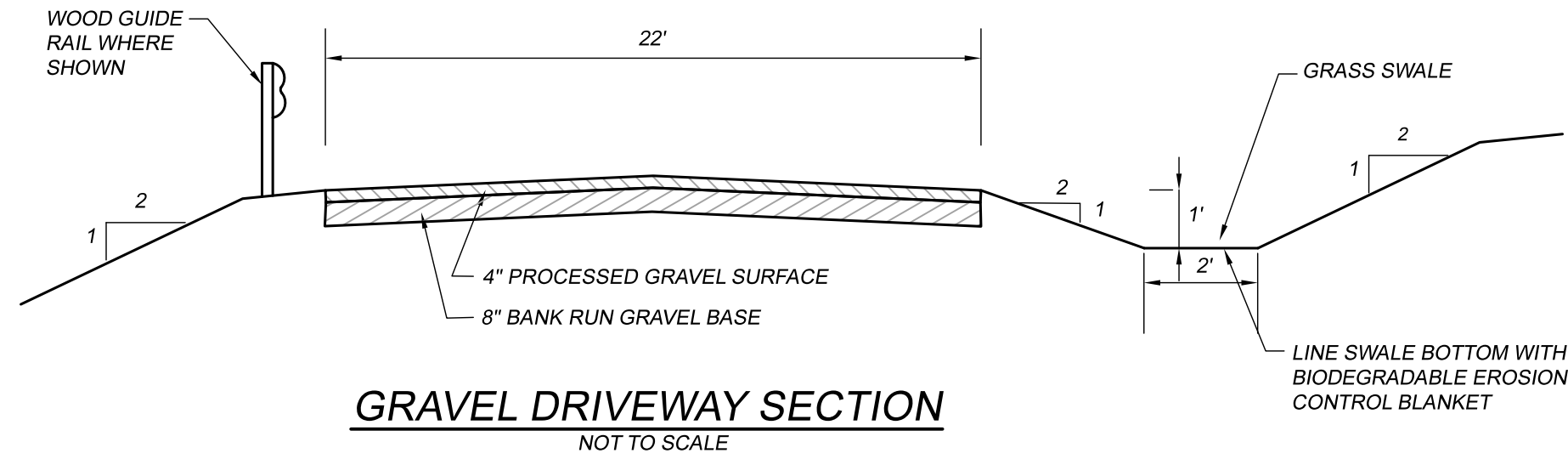
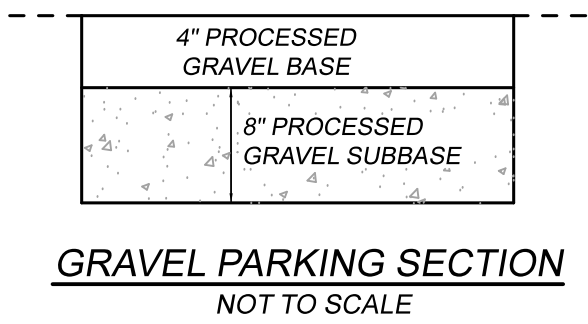
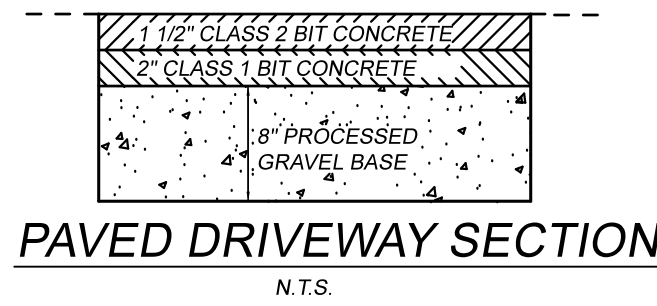
REVISIONS:

JOB NO: 22172
SCALE: 1" = 20'

DATE: SEPTEMBER 29, 2023
SHEET: 4 OF 5



PARKING LOT CROSS SECTION
1" = 20'



- PARKING NOTES:**
1. THE SITE CURRENTLY CONTAINS PARKING FOR APPROXIMATELY 15 CARS.
 2. THE APPLICANT IS PROPOSING TO CONSTRUCT AN UPPER PARKING LOT FOR AN ADDITIONAL 40 CARS.
 3. GUESTS WILL BE ENCOURAGED TO PARK OFF SITE AT LOCAL HOTELS, AND SHALL BE TRANSPORTED TO THE SITE BY BUS OR SHUTTLE.
 4. A LARGE 96' DIAMETER CIRCLE IS PROPOSED NEAR THE BARN, TO ALLOW FOR LARGE BUSES AND FIRETRUCKS TO TURN AROUND.
 5. TWO ADDITIONAL PARKING SPACES ARE PROPOSED NEAR THE BARN, FOR DELIVERIES AND DROP-OFFS.
 6. TWO HANDICAP ACCESSIBLE SPACES ARE PROPOSED NEAR THE BARN, FOR DISABLED GUESTS.
 7. THE TOTAL NUMBER OF PROPOSED PARKING SPACES IS 59.

- STRUCTURED TURF NOTES:**
1. THE PROPOSED ACCESS DRIVE BELOW THE BARN SHALL BE CONSTRUCTED FOR THE PURPOSE OF DELIVERING A BATHROOM TRAILER TO THE CEREMONY AND TENT AREA.
 2. NO OTHER VEHICLES ARE ANTICIPATED TO USE THIS DRIVEWAY.
 3. THE DRIVEWAY SHALL BE CONSTRUCTED WITH A 50-50 MIXTURE OF PROCESSED GRAVEL AND LOAM, COMPACTED, WITH A MINIMUM THICKNESS OF 12".
 4. THE DRIVEWAY SHALL BE SEEDED AS SOON AS POSSIBLE UPON COMPLETION.

NOTES AND DETAILS
PREPARED FOR
WILLOW HILL EVENTS
459 WOLF DEN ROAD, BROOKLYN, CT
MAP 15 - LOTS 15 & 15A

J&D CIVIL
ENGINEERS, LLC
401 RAVENELLE ROAD
N. GROSVENORDALE, CT 06255
860-923-2920

DESIGNED: **DDB**
CHECKED: **DRB**

REVISIONS:

JOB NO: 22172
SCALE: 1" = 20'

DATE: SEPTEMBER 29, 2023
SHEET: 5 OF 5

Willow Hill Events Wedding/Event Venue Stormwater Management Report

459 Wolf Den Road
Brooklyn, CT

September 29, 2023

Prepared by:

**J & D Civil
Engineers, LLC**

401 Ravenelle Road
N. Grosvenordale, CT 06255

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- A. Project Narrative
- B. Existing Site and Hydrologic Soil Group Descriptions
- C. Methodology
- D. Results and Comparison of Existing and Proposed Flows

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- I. Hydrologic Model
- II. Drainage Area Map

A. Project Narrative

The project consists of a wedding/event venue on a historic agricultural property. A special permit was granted for the project in March 2023. At this time the project's parking lot is being re-located to another portion of the property where it will be less visible in a wooded area and will require less grading. The surfaces of the proposed access driveway and parking lot will consist of pervious gravel.

Several LID features were incorporated into the design of the stormwater system. This included minimizing impervious area and drainage structures. The following LID elements were incorporated into the design of the project:

- Grass swale uphill of driveway
- Grass swale uphill of parking lot
- Upper stormwater basin
- Stormwater basin within parking lot
- Lower stormwater basin

These elements will trap sediment, reduce velocity of flow, promote infiltration, and capture clean runoff and direct it around graveled areas to reduce the chance of erosion.

B. Existing Site and Hydrologic Soil Group Description

The existing land cover includes woodland, pasture or lawn, and a small amount of impervious area associated with the existing buildings. The site is relatively steep, most of the property is between a 10% and 20% slope. The site drains from north to south primarily via sheet flow. Under both existing and proposed conditions, runoff from the site will enter Blackwell Brook located approximately 1000' downhill of site activities.

The soils in the area as Woodbridge fine sandy loam or Paxton/Montauk fine sandy loam. These soils belong to hydrologic group C, and have low permeability and below average capacity to absorb stormwater.

The Natural Resource Conservation Service (NRCS) groups soils into four categories according to their runoff producing characteristics. Hydrologic Soil Group A consists of soils that have a high infiltrative capacity and a low runoff potential even when saturated. Hydrologic Soil Group D soils have a very low infiltration rate and high runoff potential. The soils on the site fall with hydrologic soil group C which is on the lower end of the infiltration spectrum.

C. Methodology

The HydroCAD computer program was utilized for the drainage design of this project. This program models the hydrology and hydraulics of stormwater runoff based largely upon the methods developed by the Soil Conservation Service (now known as the Natural Resources Conservation Service). Required input data includes the size of the

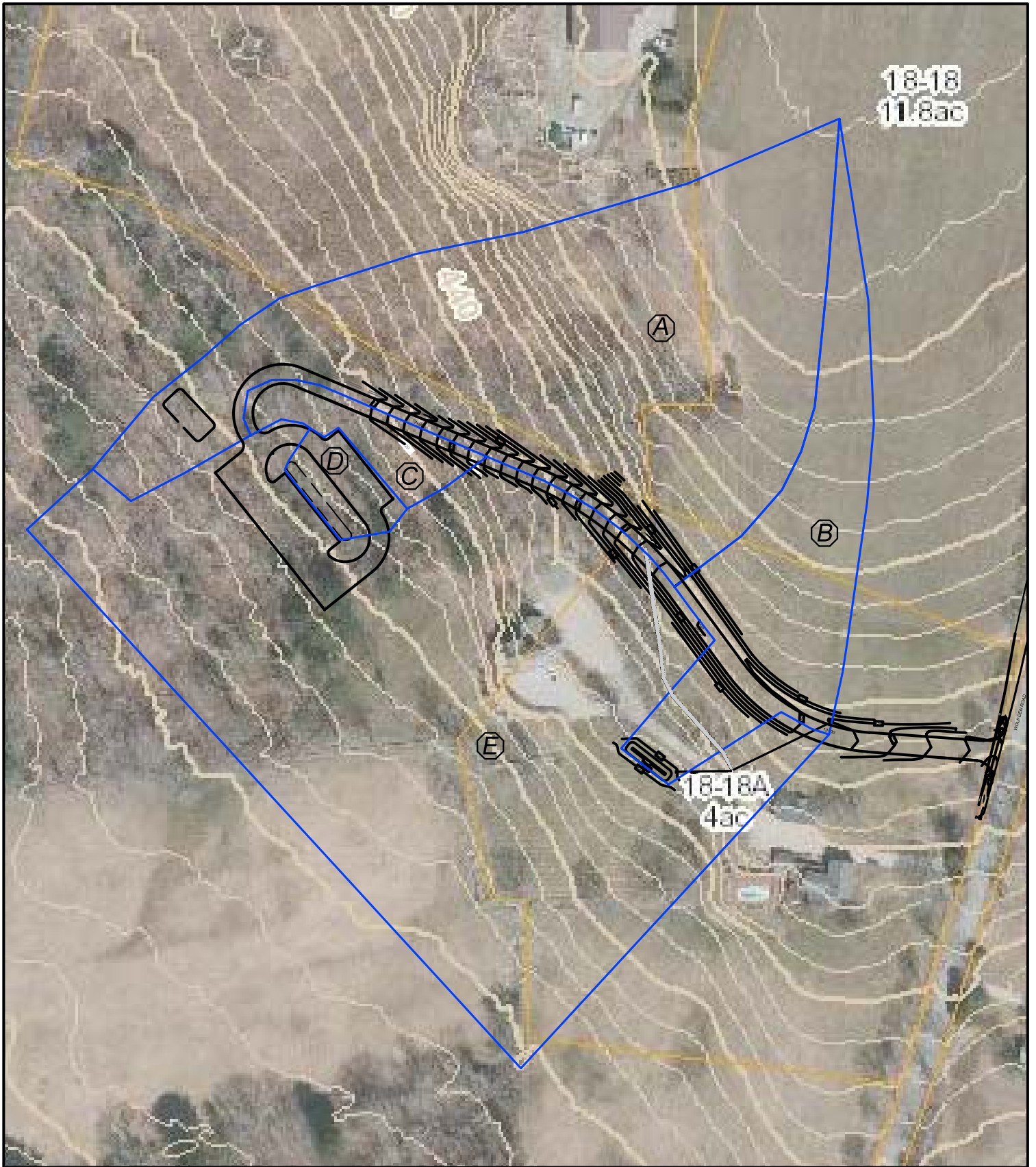
contributing drainage area, curve numbers which are based upon land use and soil types, and times of concentration.

Hydrographs with peak flows determined are calculated for each drainage area based upon the SCS synthetic unit hydrograph method. The rainfall distribution used in the program was the SCS Type III storm recommended for Connecticut. Precipitation amounts were obtained for the location from NOAA.

E. Results and Comparison of Existing and Proposed Flows

Peak Flow Comparison

	Existing	Proposed
10 Year Storm	21.9 CFS	22.7 CFS
25 Year Storm	30.2 CFS	31.0 CFS
100 Year Storm	43.1 CFS	44.2 CFS



DRAINAGE AREA MAP
SCALE 1" = 150'

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	CT 10-year	Type III 24-hr		Default	24.00	1	5.19	2
2	CT 100-year	Type III 24-hr		Default	24.00	1	8.04	2
3	CT 25-year	Type III 24-hr		Default	24.00	1	6.31	2

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Drainage Model for BH Trailers

Type III 24-hr CT 10-year Rainfall=5.19"

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Summary for Subcatchment 1S: Existing

Runoff = 21.93 cfs @ 12.46 hrs, Volume= 2.863 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 6.10 cfs @ 12.53 hrs, Volume= 0.861 af, Depth= 2.43"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Type III 24-hr CT 10-year Rainfall=5.19"

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Summary for Subcatchment B: northeast

Runoff = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Depth= 2.69"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 1.78 cfs @ 12.20 hrs, Volume= 0.166 af, Depth= 2.52"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Type III 24-hr CT 10-year Rainfall=5.19"

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Summary for Subcatchment D: upper lot

Runoff = 1.03 cfs @ 12.07 hrs, Volume= 0.072 af, Depth= 3.75"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment E: Southern

Runoff = 13.71 cfs @ 12.32 hrs, Volume= 1.517 af, Depth= 2.69"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 10-year Rainfall=5.19"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event
 Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af
 Outflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 9.47 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 3.93 fps, Avg. Travel Time= 0.5 min

Peak Storage= 36 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.40' , Surface Width= 0.98'

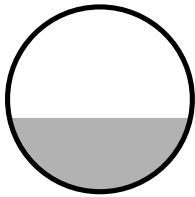
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.27 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event

Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af

Outflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.1 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 10.13 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 4.20 fps, Avg. Travel Time= 0.2 min

Peak Storage= 17 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.38' , Surface Width= 0.97'

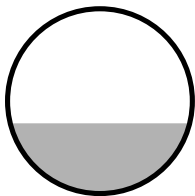
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.07 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 62.0' Slope= 0.1532 '/'

Inlet Invert= 434.50', Outlet Invert= 425.00'



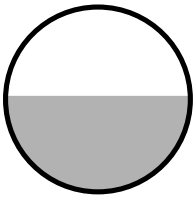
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 2.52" for CT 10-year event
Inflow = 1.78 cfs @ 12.20 hrs, Volume= 0.166 af
Outflow = 1.78 cfs @ 12.21 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.2 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.32 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.71 fps, Avg. Travel Time= 0.7 min

Peak Storage= 30 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.52' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.34 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 72.0' Slope= 0.0208 '/
Inlet Invert= 400.00', Outlet Invert= 398.50'



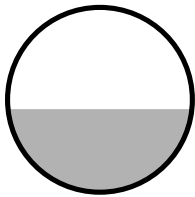
Summary for Reach 4R: (new Reach)

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 2.40" for CT 10-year event
Inflow = 2.13 cfs @ 12.23 hrs, Volume= 0.204 af
Outflow = 2.13 cfs @ 12.24 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.99 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.58 fps, Avg. Travel Time= 1.1 min

Peak Storage= 53 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.56' , Surface Width= 1.24'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 5.14 cfs

15.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 100.0' Slope= 0.0150 '/
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 2.52" for CT 10-year event
Inflow = 22.67 cfs @ 12.36 hrs, Volume= 2.868 af
Outflow = 22.67 cfs @ 12.36 hrs, Volume= 2.868 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 3.75" for CT 10-year event
Inflow = 1.03 cfs @ 12.07 hrs, Volume= 0.072 af
Outflow = 0.42 cfs @ 12.27 hrs, Volume= 0.039 af, Atten= 59%, Lag= 12.0 min
Primary = 0.42 cfs @ 12.27 hrs, Volume= 0.039 af
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 401.86' @ 12.27 hrs Surf.Area= 1,229 sf Storage= 1,517 cf

Plug-Flow detention time= 212.8 min calculated for 0.039 af (54% of inflow)
Center-of-Mass det. time= 104.0 min (902.9 - 798.9)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.41 cfs @ 12.27 hrs HW=401.86' (Free Discharge)
↑1=Orifice/Grate (Weir Controls 0.41 cfs @ 0.82 fps)

Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 2.43" for CT 10-year event
 Inflow = 7.27 cfs @ 12.49 hrs, Volume= 1.065 af
 Outflow = 7.26 cfs @ 12.49 hrs, Volume= 1.008 af, Atten= 0%, Lag= 0.3 min
 Primary = 7.26 cfs @ 12.49 hrs, Volume= 1.008 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.14' @ 12.49 hrs Surf.Area= 2,144 sf Storage= 2,734 cf

Plug-Flow detention time= 40.4 min calculated for 1.008 af (95% of inflow)
 Center-of-Mass det. time= 11.6 min (876.8 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=7.23 cfs @ 12.49 hrs HW=398.14' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 7.23 cfs @ 0.88 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 2.69" for CT 10-year event
 Inflow = 2.76 cfs @ 12.47 hrs, Volume= 0.364 af
 Outflow = 2.76 cfs @ 12.48 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.3 min
 Primary = 2.76 cfs @ 12.48 hrs, Volume= 0.343 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.07' @ 12.48 hrs Surf.Area= 990 sf Storage= 981 cf

Plug-Flow detention time= 43.7 min calculated for 0.343 af (94% of inflow)
 Center-of-Mass det. time= 12.7 min (868.9 - 856.2)

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Type III 24-hr CT 10-year Rainfall=5.19"

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Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=2.75 cfs @ 12.48 hrs HW=424.07' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.75 cfs @ 0.64 fps)

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Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Subcatchment 1S: Existing

Runoff = 43.41 cfs @ 12.45 hrs, Volume= 5.644 af, Depth= 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 12.25 cfs @ 12.50 hrs, Volume= 1.716 af, Depth= 4.85"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Type III 24-hr CT 100-year Rainfall=8.04"

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Summary for Subcatchment B: northeast

Runoff = 5.31 cfs @ 12.46 hrs, Volume= 0.701 af, Depth= 5.19"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 3.53 cfs @ 12.20 hrs, Volume= 0.327 af, Depth= 4.96"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Summary for Subcatchment D: upper lot

Runoff = 1.73 cfs @ 12.07 hrs, Volume= 0.124 af, Depth= 6.49"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment E: Southern

Runoff = 26.36 cfs @ 12.31 hrs, Volume= 2.926 af, Depth= 5.19"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 100-year Rainfall=8.04"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event
 Inflow = 5.31 cfs @ 12.46 hrs, Volume= 0.701 af
 Outflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 11.18 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 4.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 59 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.58' , Surface Width= 0.99'

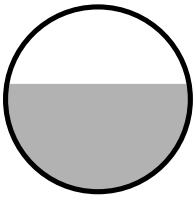
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.27 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event

Inflow = 5.32 cfs @ 12.47 hrs, Volume= 0.701 af

Outflow = 5.31 cfs @ 12.47 hrs, Volume= 0.701 af, Atten= 0%, Lag= 0.0 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 12.00 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 4.86 fps, Avg. Travel Time= 0.2 min

Peak Storage= 27 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.55' , Surface Width= 0.99'

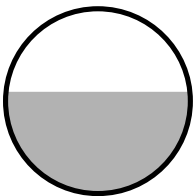
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.07 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 62.0' Slope= 0.1532 '/'

Inlet Invert= 434.50', Outlet Invert= 425.00'



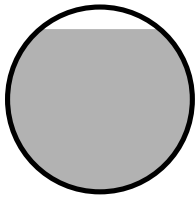
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 4.96" for CT 100-year event
Inflow = 3.53 cfs @ 12.20 hrs, Volume= 0.327 af
Outflow = 3.52 cfs @ 12.20 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.3 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.85 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.98 fps, Avg. Travel Time= 0.6 min

Peak Storage= 53 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.88' , Surface Width= 0.65'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.34 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 72.0' Slope= 0.0208 '/'
Inlet Invert= 400.00', Outlet Invert= 398.50'

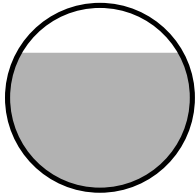
**Summary for Reach 4R: (new Reach)**

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 4.92" for CT 100-year event
Inflow = 4.64 cfs @ 12.16 hrs, Volume= 0.418 af
Outflow = 4.64 cfs @ 12.16 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.74 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.82 fps, Avg. Travel Time= 0.9 min

Peak Storage= 98 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.93' , Surface Width= 1.09'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 5.14 cfs

15.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 100.0' Slope= 0.0150 '/'
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 5.00" for CT 100-year event
 Inflow = 44.24 cfs @ 12.34 hrs, Volume= 5.684 af
 Outflow = 44.24 cfs @ 12.34 hrs, Volume= 5.684 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 6.49" for CT 100-year event
 Inflow = 1.73 cfs @ 12.07 hrs, Volume= 0.124 af
 Outflow = 1.66 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 4%, Lag= 1.3 min
 Primary = 1.66 cfs @ 12.09 hrs, Volume= 0.091 af
 Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 401.96' @ 12.09 hrs Surf.Area= 1,272 sf Storage= 1,637 cf

Plug-Flow detention time= 148.9 min calculated for 0.091 af (73% of inflow)
 Center-of-Mass det. time= 61.9 min (845.8 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.65 cfs @ 12.09 hrs HW=401.96' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 1.65 cfs @ 1.30 fps)

Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 4.86" for CT 100-year event
 Inflow = 14.43 cfs @ 12.48 hrs, Volume= 2.134 af
 Outflow = 14.42 cfs @ 12.49 hrs, Volume= 2.077 af, Atten= 0%, Lag= 0.6 min
 Primary = 14.42 cfs @ 12.49 hrs, Volume= 2.077 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.22' @ 12.49 hrs Surf.Area= 2,407 sf Storage= 2,915 cf

Plug-Flow detention time= 23.6 min calculated for 2.077 af (97% of inflow)
 Center-of-Mass det. time= 8.0 min (852.0 - 844.0)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=14.41 cfs @ 12.49 hrs HW=398.22' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir** (Weir Controls 14.41 cfs @ 1.11 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 5.19" for CT 100-year event
 Inflow = 5.31 cfs @ 12.47 hrs, Volume= 0.701 af
 Outflow = 5.31 cfs @ 12.47 hrs, Volume= 0.680 af, Atten= 0%, Lag= 0.1 min
 Primary = 5.31 cfs @ 12.47 hrs, Volume= 0.680 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.11' @ 12.47 hrs Surf.Area= 1,083 sf Storage= 1,022 cf

Plug-Flow detention time= 26.6 min calculated for 0.680 af (97% of inflow)
 Center-of-Mass det. time= 9.1 min (846.4 - 837.3)

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Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.29 cfs @ 12.47 hrs HW=424.11' (Free Discharge)↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 5.29 cfs @ 0.79 fps)

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment 1S: Existing

Runoff = 30.20 cfs @ 12.45 hrs, Volume= 3.921 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
0.090	98	Roofs, HSG C
0.890	96	Gravel surface, HSG C
8.160	74	Pasture/grassland/range, Good, HSG C
4.510	70	Woods, Good, HSG C
13.650	74	Weighted Average
13.560		99.34% Pervious Area
0.090		0.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.3	300	0.0400	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.40"
7.0	800	0.0750	1.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.3	1,100	Total			

Summary for Subcatchment A: NorthernRunoff = 8.46 cfs @ 12.53 hrs, Volume= 1.186 af, Depth= 3.35"
Routed to Pond 3P : lower basinRunoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
2.530	74	Pasture/grassland/range, Good, HSG C
1.540	70	Woods, Good, HSG C
0.180	96	Gravel surface, HSG C
4.250	73	Weighted Average
4.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.3	300	0.0200	0.15		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.5	200	0.1000	2.21		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
2.8	750	0.0880	4.45		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
37.6	1,250	Total			

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment B: northeast

Runoff = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Depth= 3.65"
 Routed to Reach 1R :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
1.500	74	Pasture/grassland/range, Good, HSG C
0.120	96	Gravel surface, HSG C
1.620	76	Weighted Average
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	300	0.0290	0.17		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
2.5	250	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	240	0.0200	2.12		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
33.1	790	Total			

Summary for Subcatchment C: above lot

Runoff = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af, Depth= 3.45"
 Routed to Reach 3R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (sf)	CN	Description
8,712	74	Pasture/grassland/range, Good, HSG C
21,344	70	Woods, Good, HSG C
4,356	96	Gravel surface, HSG C
34,412	74	Weighted Average
34,412		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	180	0.0800	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.7	210	0.0190	2.07		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.4	390	Total			

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Type III 24-hr CT 25-year Rainfall=6.31"

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Summary for Subcatchment D: upper lot

Runoff = 1.30 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 4.81"
 Routed to Pond 1P : mid lot basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
0.090	74	Pasture/grassland/range, Good, HSG C
0.140	96	Gravel surface, HSG C
0.230	87	Weighted Average
0.230		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Summary for Subcatchment E: Southern

Runoff = 18.61 cfs @ 12.32 hrs, Volume= 2.056 af, Depth= 3.65"
 Routed to Reach 5R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Type III 24-hr CT 25-year Rainfall=6.31"

Area (ac)	CN	Description
4.660	74	Pasture/grassland/range, Good, HSG C
1.250	70	Woods, Good, HSG C
0.760	96	Gravel surface, HSG C
0.090	98	Roofs, HSG C
6.760	76	Weighted Average
6.670		98.67% Pervious Area
0.090		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	300	0.0670	0.24		Sheet Flow, lawn Grass: Dense n= 0.240 P2= 3.40"
1.8	200	0.0700	1.85		Shallow Concentrated Flow, Pasture - Flatter Short Grass Pasture Kv= 7.0 fps
22.4	500	Total			

Summary for Reach 1R:

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event
 Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af
 Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.1 min
 Routed to Reach 2R : (new Reach)

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Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 10.27 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 4.21 fps, Avg. Travel Time= 0.5 min

Peak Storage= 45 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.47' , Surface Width= 1.00'

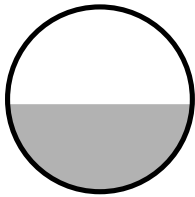
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.27 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 124.0' Slope= 0.1274 '/'

Inlet Invert= 450.30', Outlet Invert= 434.50'



Summary for Reach 2R: (new Reach)

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event

Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af

Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.1 min

Routed to Pond B1 : Upper Basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Max. Velocity= 11.00 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 4.49 fps, Avg. Travel Time= 0.2 min

Peak Storage= 21 cf @ 12.47 hrs

Average Depth at Peak Storage= 0.45' , Surface Width= 0.99'

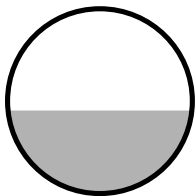
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 9.07 cfs

12.0" Round Pipe

n= 0.020 Corrugated PE, corrugated interior

Length= 62.0' Slope= 0.1532 '/'

Inlet Invert= 434.50', Outlet Invert= 425.00'



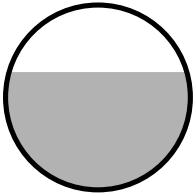
Summary for Reach 3R: (new Reach)

Inflow Area = 0.790 ac, 0.00% Impervious, Inflow Depth = 3.45" for CT 25-year event
Inflow = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af
Outflow = 2.45 cfs @ 12.20 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.2 min
Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.65 fps, Min. Travel Time= 0.3 min
Avg. Velocity= 1.83 fps, Avg. Travel Time= 0.7 min

Peak Storage= 38 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.64' , Surface Width= 0.96'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.34 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 72.0' Slope= 0.0208 '/
Inlet Invert= 400.00', Outlet Invert= 398.50'

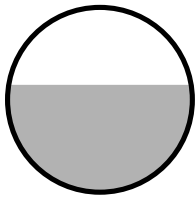
**Summary for Reach 4R: (new Reach)**

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 3.37" for CT 25-year event
Inflow = 3.29 cfs @ 12.17 hrs, Volume= 0.286 af
Outflow = 3.28 cfs @ 12.17 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 3P : lower basin

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.44 fps, Min. Travel Time= 0.4 min
Avg. Velocity= 1.69 fps, Avg. Travel Time= 1.0 min

Peak Storage= 74 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.73' , Surface Width= 1.23'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 5.14 cfs

15.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 100.0' Slope= 0.0150 '/
Inlet Invert= 398.50', Outlet Invert= 397.00'



Summary for Reach 5R: (new Reach)

Inflow Area = 13.650 ac, 0.66% Impervious, Inflow Depth = 3.47" for CT 25-year event
 Inflow = 30.98 cfs @ 12.35 hrs, Volume= 3.942 af
 Outflow = 30.98 cfs @ 12.35 hrs, Volume= 3.942 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: mid lot basin

Inflow Area = 0.230 ac, 0.00% Impervious, Inflow Depth = 4.81" for CT 25-year event
 Inflow = 1.30 cfs @ 12.07 hrs, Volume= 0.092 af
 Outflow = 1.08 cfs @ 12.12 hrs, Volume= 0.059 af, Atten= 17%, Lag= 3.1 min
 Primary = 1.08 cfs @ 12.12 hrs, Volume= 0.059 af
 Routed to Reach 4R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 401.92' @ 12.12 hrs Surf.Area= 1,254 sf Storage= 1,587 cf

Plug-Flow detention time= 176.8 min calculated for 0.059 af (64% of inflow)
 Center-of-Mass det. time= 77.8 min (869.7 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	400.00'	2,610 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
400.00	400	0	0
402.00	1,290	1,690	1,690
402.50	2,390	920	2,610

Device	Routing	Invert	Outlet Devices
#1	Primary	401.80'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.07 cfs @ 12.12 hrs HW=401.92' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 1.07 cfs @ 1.13 fps)

Summary for Pond 3P: lower basin

Inflow Area = 5.270 ac, 0.00% Impervious, Inflow Depth = 3.35" for CT 25-year event
 Inflow = 10.02 cfs @ 12.49 hrs, Volume= 1.472 af
 Outflow = 10.01 cfs @ 12.49 hrs, Volume= 1.415 af, Atten= 0%, Lag= 0.2 min
 Primary = 10.01 cfs @ 12.49 hrs, Volume= 1.415 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 398.17' @ 12.49 hrs Surf.Area= 2,253 sf Storage= 2,807 cf

Plug-Flow detention time= 31.3 min calculated for 1.415 af (96% of inflow)
 Center-of-Mass det. time= 9.7 min (864.9 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	5,816 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	781	0	0
398.00	1,690	2,471	2,471
399.00	5,000	3,345	5,816

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=9.98 cfs @ 12.49 hrs HW=398.17' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 9.98 cfs @ 0.98 fps)

Summary for Pond B1: Upper Basin

Inflow Area = 1.620 ac, 0.00% Impervious, Inflow Depth = 3.65" for CT 25-year event
 Inflow = 3.75 cfs @ 12.47 hrs, Volume= 0.493 af
 Outflow = 3.75 cfs @ 12.47 hrs, Volume= 0.472 af, Atten= 0%, Lag= 0.2 min
 Primary = 3.75 cfs @ 12.47 hrs, Volume= 0.472 af
 Routed to Reach 5R : (new Reach)

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Peak Elev= 424.09' @ 12.47 hrs Surf.Area= 1,028 sf Storage= 997 cf

Plug-Flow detention time= 34.7 min calculated for 0.472 af (96% of inflow)
 Center-of-Mass det. time= 10.9 min (858.3 - 847.5)

22172 Wineland - 2023-09-29

Prepared by J&D Civil Engineers LLC

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Drainage Model for BH Trailers

Type III 24-hr CT 25-year Rainfall=6.31"


Printed 10/2/2023

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Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
422.00	96	0	0
424.00	820	916	916
424.50	2,000	705	1,621

Device	Routing	Invert	Outlet Devices
#1	Primary	424.00'	60.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.72 cfs @ 12.47 hrs HW=424.09' (Free Discharge)

1=Broad-Crested Rectangular Weir (Weir Controls 3.72 cfs @ 0.70 fps)

Richard Zulick R.S S.S
Soil Scientist
400 Nott Highway
Ashford, CT
06278

October 1, 2023

*Town of Brooklyn
Inland Wetlands & Watercourses Commission
Brooklyn, CT*

Re: Wetland delineation report - 459 Wolf Den Road, Brooklyn, CT

Dear Commissioners:

Project Title and Location: Access Driveway and Parking Lot Plan prepared for Willow Hill LLC 459 Wolf Den Road, Brooklyn, CT Map 18 – Lots 18 & 18A. Plan by J&D Civil Engineers and dated August 2023

Re: Wetland delineation

Methods and Definitions:

Wetlands were delineated according to the standards of the Natural Resources Conservation Services (NRCS) National Cooperative Soil Survey and the definitions of inland wetlands and watercourses in the Connecticut General Statutes, Chapter 440, Sections 22a-36 through 22a-45as amended. Wetlands, as defined by the Statute, are those soil types designated as poorly-drained, very poorly drained, floodplain or alluvial in accordance with the NRCS National Cooperative Soil Survey.

Watercourses are defined as rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the Town of Brooklyn or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes.

Intermittent watercourses are defined permanent channel and bank and the occurrence of two or more of the following characteristics: (a) evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation.

A wetland field survey was completed in August of 2023. . This survey was conducted to delineate on-site wetland boundaries using an auger and tile spade to examine the upper 20 inches of the soil profile. Those areas meeting the criteria noted above were marked in the field with sequentially numbered pink and blue flagging numbered WF 1A – WF 2A, WF 1B – WF 2B, WF 1C – 3C and WF 1D – WF 3D (see plan) Random soil profiles were observed across the property to verify the presence or absence of regulated wetland soil types.

On-site investigation:

The lot is generally gently sloping from east to west. The flagging shown on the Job number 22172, 40 scale plan by J&D Civil engineers shows the eastern most points of a larger wetland located to the west of the proposed activity.

The wetland soils identified on this proposed project are the poorly drained Ridgebury soil series.

Ridgebury Soil Series

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in lodgment till derived mainly from granite, gneiss and/or schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in depressions in uplands. They also occur in drainageways in uplands, in toeslope positions of hills, drumlins, and ground moraines, and in till plains

TAXONOMIC CLASS: Loamy, mixed, superactive, acid, mesic, shallow Aeric Endoaquepts

Comments

Upon entering the property, my general impression of the area was that dense undergrowth made it very difficult to travel throughout. The vines and thorn briars are probably the result of the area being much more open in the past. These early successional growth is a result of a great deal of sun hitting the forest floor.

The larger wetland located well to the west of this proposed activity provides many values and functions and spans an area that includes a watercourse.

Conclusions

A small depression (identified by flags WF 1C – WF 3C) is proposed to be filled to allow for adequate parking area. This small depression does not function as a vernal pool and exists because of the micro topography created by the woods road to its immediate west.

In terms of my general opinion of the wetland area located to the west of the proposed activity, I feel that (with adequate erosion control devices in place) the proposed activity will not have any significant negative impact to the values and functions of this wetland and watercourse area.

If you have any questions concerning the wetland assessment or this report, please feel free to contact me.

Sincerely,



*Richard Zulick
Certified Forester and Soil Scientist
Member SSSSNE*

Town of Brooklyn

Inland Wetlands Budget FY24

From Date: 9/1/2023

To Date: 9/30/2023

Fiscal Year: 2023-2024

☐ Subtotal by Collapse Mask

☐ Include pre encumbrance

☒ Print accounts with zero balance

☒ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.41.4163.51900	Inland Wetlands-Wages-Recordin	\$1,000.00	\$87.50	\$350.00	\$650.00	\$0.00	\$650.00	65.00%
1005.41.4163.53020	Inland Wetlands-Legal Fees	\$3,500.00	\$0.00	\$0.00	\$3,500.00	\$0.00	\$3,500.00	100.00%
1005.41.4163.53200	Inland Wetlands-Professional A	\$65.00	\$0.00	\$0.00	\$65.00	\$0.00	\$65.00	100.00%
1005.41.4163.53400	Inland Wetlands-Professional S	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55400	Inland Wetlands-Advertising &	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55500	Inland Wetlands-Printing & Pub	\$120.00	\$0.00	\$0.00	\$120.00	\$0.00	\$120.00	100.00%
1005.41.4163.56900	Inland Wetlands-Other Supplies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%
Grand Total:		\$5,685.00	\$87.50	\$350.00	\$5,335.00	\$0.00	\$5,335.00	93.84%

End of Report